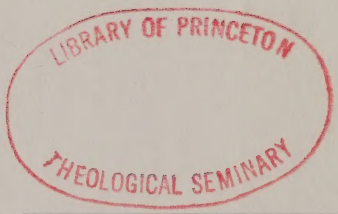


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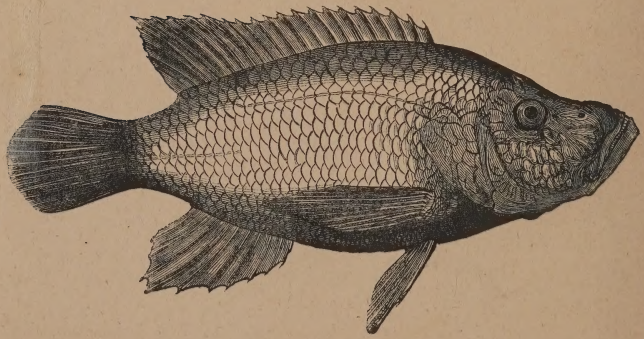

ST. PETER'S FISH.

By-Paths of Bible Knowledge.

XI.

# SCRIPTURE NATURAL HISTORY.

## II.

## THE ANIMALS MENTIONED IN THE BIBLE.

BY

HENRY CHICHESTER HART, B.A. (T.C.D.), F.L.S.

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# PREFACE.

In the following work the writer has availed himself of whatever knowledge he could obtain from previous authors. In addition to these sources, he has had the advantage of a lengthened tour in pursuit of Natural History in the Holy Land and its confines. The familiarity with most branches of the subjects here dealt with which arises from such exploration is most advantageous, if not necessary for the work.

Owing to the researches carried on by the Palestine Exploration Fund, considerable accuracy has been arrived at in our estimate of Palestine Natural History. By its assistance, Canon Tristram worked out his valuable series of investigations, which have supplied us with a fund of information. And it was under the auspices of this Society that the expedition of which I formed a part brought a successful journey to a close, an account of which will be found in its publications by the leader of the party, Dr. Hull, F.R.S.[1]

Other works have been consulted—*Bible Animals*, by the Rev. J. G. Wood; Smith's *Dictionary of the Bible*; articles in the *Transactions of the Biblical Archæological*

[1] See *Mount Seir, Sinai, and Western Palestine*, by Edward Hull. A portion of the results of this expedition connected with the Natural History are still unpublished. See also, *On the Botany of Sinai and South Palestine*, Trans. Royal Irish Acad. 1885, by the present author.

*Society*, by the Rev. Wm. Houghton; *The Natural History of the Bible* by Thaddeus Mason, may be especially mentioned. These relate especially to the subject in hand, and the last mentioned volume will be found of much value as a survey of previous knowledge, although written before much accurate information had been gathered on the spot by competent observers.

With regard to the present work, it will be felt by all that any fresh light, however slight, which can be thrown by modern scientific study upon obscurities in Holy Writ is of the first importance; and as the obscurities, so far as they come within the scope of the present volume, arise from our own ignorance, it behoves all labourers in this sacred field of investigation to toil with undiminished assiduity until these obscurities be removed. In many cases, error arises from seeking for too much accuracy. Generic names, or terms used to convey a general idea—say of a hawk, a gull, or a lizard—should not be limited in too specific a manner. This applies especially to those passages where the sense is metaphoric. Where a special animal is undoubtedly intended, as in the case of its being forbidden for food, we desire an accurate interpretation; and when we consider how little was known of the natural products of Palestine at the time the Bible was rendered to us from the Hebrew, it is not marvellous that some of the interpretations do not bear the test of recent research. On the other hand, every fresh observation lends a new force or adds an additional beauty to one

or more passages ; and at the same time that it explains a difficulty of the text, it increases in us a reverence and a faith for the inspired character of the Sacred Volume.

The writer's method has been to take in alphabetical order every animal mentioned in the Bible, and to deal with each so as to draw especial attention to the characteristics alluded to in the various references. Where the translation seems to be doubtful, either from the nature of the context, or from the fact that the same word has elsewhere received a different rendering in the Scriptures, or because the animal quoted does not now and probably did not inhabit Palestine—in these cases what appeared to be the most probable of the various suggestions offered by different commentators has been given, leaving the reader to judge for himself in accordance with the weight of evidence. It will at once be seen that in several instances the suggested emendations are unmistakably correct, while in others they are of so purely hypothetical a nature as to be hardly worthy of consideration. And where a general term is used, it is wise to pause well before endeavouring to twist it into a particular signification in order to meet our present knowledge of Natural History in the Holy Land.

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# ANIMALS OF THE BIBLE.

## Adder (Heb. עַכְשׁוּב *akshub*).

The Adder is spoken of five times in the Bible, and the word is used as the translation of no less than four distinct Hebrew words. In Gen. xlix. 17 the Adder is spoken of as hiding in the way and biting the horse's

HORNED ASP.

heels so that the rider is overthrown. The Hebrew term שְׁפִיפֹן *shephiphon* in this passage (elsewhere rendered 'cockatrice') is probably the same word as the modern

Arabic شِفٌ *shiphon* or سِفٌّ *sipphon*, the name for the Horned Sand Snake or *Cerastes Haselquistii*. It is the habit of this extremely venomous viper to lurk in the ruts of wheels or the depression of a footprint by the roadside, and to bite the legs of unwary passers-by, or of horses or cattle. Horses, aware of its nature, are said to be in terror of the Cerastes, and cannot be induced to proceed, once they have detected the concealed reptile, for its bite is most deadly. It derives its name of 'horned' from the presence of two protuberances, one over each eye. It is of a grayish tint, about a foot long, and very active. The asp of Cleopatra, 'the pretty worm of Nilus,' has been identified with this animal, which is to be seen figured on ancient Egyptian monuments. *Cerastes Haselquistii* is found in Egypt, Arabia, and the surrounding desert countries extending northwards to Southern Judaea, and eastwards to Persia. The habits of ambush and craft which it uses in securing its prey are selected as characteristic of the methods by which the children of the tribe of Dan would deal with their foes. Vipers are viviparous, and inhabit the Old World and Australia, but are found in greatest variety in Africa. To these are nearly allied the American rattlesnakes, with which they make up one section of the poisonous snakes, called the Viperine—the other section being the poisonous Colubrine snakes. Viperine snakes are distinguished by the triangular-shaped head, and the tail suddenly contracted and short in comparison with the length of the body. Some of them seem to be aware of their deadly venom, as they strike their prey and leave it, returning to swallow it after it has died. There are five or six species found in Palestine.

In two passages in the Psalms 'adder' is the trans-

lation of the Hebrew פֶּתֶן *pethen*, with 'asp' appended in the margin. Elsewhere when *pethen* occurs it is translated 'asp.' See ASP.

In another passage in the Psalms, 'Adder's poison is under their lips' (Ps. cxl. 3), the word is the rendering of the Hebrew *akshub*, which has been derived from a verb signifying to 'bend back on itself,' and may refer to any of the poisonous serpents, as they all have the habit of bending back before striking.

In Proverbs xxiii. 32, the word 'adder' is the rendering of the Hebrew צִפְעֹנִי *tsiphoni*, which is given as 'cockatrice' in the other places where it occurs. See COCKATRICE.

Reptiles of the snake and lizard sorts are very numerous in Palestine. The dry, hot summers, with little or no winter, and the sandy nature of many districts, are admirably adapted to their modes of life.

ANT (Heb. נְמָלָה *nemalah*; Turkish and Arabic نمل *neml*).

The Ant is mentioned twice in the Old Testament, both times in the Book of Proverbs (vi. 6 and xxx. 25). Ants are characterised as being exceeding wise, and in both passages are commended for their diligence in preparing their food in the summer, thus by their foresight providing for their winter sustenance. Such is at least the obvious implication contained in the text. This habit was, and is still, contradicted by some writers, from their knowledge of the ways of European ants, which are dormant in the winter, and therefore stand in no need of food. Shakespeare mentions (*Lear*, ii. 4. 67) that 'there's no labouring i' the winter' for the ant; which has been interpreted to show that he was thus early aware of their hybernation; but it might mean

also that the insect was provided for, and had no further toil for existence.

It is amply ascertained, however, that in the East and other warm countries where hybernation is impossible, ants do store up granaries from the harvest for winter use. In India, Central America, Brazil, and elsewhere, as well as in the hotter parts of the Mediterranean region, this has been shown to be a part of their life-history, thus verifying the accuracy and

SYRIAN ANTS.

beauty of the example held up to sluggards. A most instructive and conclusive illustration of the familiarity of Eastern people in ancient times with this instinct is given by Canon Tristram from a compilation of Jewish agricultural legislation dating back to the time of our Saviour. In this, the 'Mishna,' there were actually laws regulating the rights of possession between owners and gleaners to these stores set aside by ants and discovered in the growing crop.

Ants of different sorts are exceedingly abundant in all

parts of Palestine, and in the desert regions from the Dead Sea to Sinai they are the reverse of dormant in winter. In the Ghor at the south end of the Dead Sea a very interesting species of Polyrhachis (*P. seminiger*) was gathered by me in its little globular nest affixed to a tamarisk twig. Most of the Palestine ants, however, probably belong to the genus Formica, and make ground nests. The intelligence of ants, and their marvellous sagacity in maintaining their highly complex social economy, and their care of their young, have been the subject of perhaps more painstaking observation than any other study in zoology. From Huber in the past to Sir John Lubbock in the present time, fresh instances of their marvellous instincts and industry have been continually brought to light. One of the most wonderful observations is in relation to the frugality alluded to in the Book of Proverbs. It is stated that these harvesting ants bite off the radicle at the end of the seed to prevent its germinating, but not until it has sprouted sufficiently to develope the saccharine matter, and further that they convey all their stores occasionally to the surface, in order, apparently, to assist the process of malting.

Ants belong to the family *Formicidae*, in the Aculeate section of Hymenopterous insects, which also includes wasps and bees. Generally speaking, they differ from the rest of the section by their subterranean dwellings, and also by the development amongst them of a race of neuters, who do the greatest part of the work. The females are wingless, except in the breeding season, and larger than the males, which have always four wings. Upwards of 1000 species of ant are described from various parts of the earth, and no doubt more remain to be discovered.

## Ape (Heb. קוֹפִים *kophim*).

The Ape is mentioned twice only in the Bible, and the two passages (1 Kings x. 22 ; 2 Chron. ix. 21) are parallel descriptions of the commodities which were brought once in three years to King Solomon from Tharshish. These were 'gold and silver, ivory, and apes and peacocks.' In the early travels collected by Purchas (1613, 1625), the term ape is applied to the various quadrumanous animals. In modern language the term is used generally of those which approach mankind in structure, and which may be spoken of as monkeys without tails or cheek-pouches. In the passages referred to in the Bible, the term *kophim* in the Hebrew, as well as the terms translated 'ivory' and 'peacock,' are identical with the Tamil words in use to this day to signify these objects in Ceylon and in some parts of Southern India. [See Peacock, Elephant.] It is therefore safe to conclude that Tharshish, which is otherwise unidentified, was the old name for Ceylon, or some part of it, or of the adjacent continent, and that it was thither that the early Phenician traders guided the king's ships to obtain his treasures. It is no doubt possible it may have been an intermediate trading place which drew its supplies from India. Hence the apes mentioned in the sacred text were in all probability natives of Ceylon, and as the anthropoid apes (*Simiidae*) are unknown there, there is no doubt the term was used, as in other early writers, for some species of long-tailed monkey, of which several are found in India, chiefly of the genus *Semnopithecus*.

Animals of this class have been at all times favourites in captivity. More than one kind of monkey, natives of the countries around and south of the Red Sea, have

been found figured upon Egyptian monuments. Their mummies have also been discovered, and there is no doubt that they were held in some degree sacred in ancient Egypt, as they are to this day amongst the Hindoos.

The Gelada (*G. Ruppellii*), a dog-headed baboon, is found figured on Egyptian monuments as sacred to Thoth, the lord of letters. This animal is a native of Arabia and Abyssinia. Houghton identifies two monkeys depicted on Assyrian monuments, the Wanderoo (*Macacus silenus*) and the Hoonuman (*Semnopithecus entellus*), both of them Indian species. The latter is the one held in veneration in India, and may well have been the Biblical ape. It is worth mentioning that 'Wanderoo' is a Cingaleese name, and is certainly misapplied to *M. silenus*, which is not native in Ceylon.

### Asp (Heb. פֶּתֶן *pethen*).

The Hebrew word which is translated Asp is found six times in the Scriptures. In these passages the allusions are to its poisonous venom (Deut. xxxii. 33; Job xx. 14–16), to the holes it resides in (Isaiah xi. 8), and to its being one which serpent-charmers practised their skill upon (Psalm lviii. 4, 5). Further, it is spoken of as the deaf adder, which probably signifies that sometimes one of the animals in question was refractory.

The Asp or Aspic of the ancients was no doubt the Egyptian Cobra, or Naja (*Naja haje*). It dwells or conceals itself in holes in walls, outhouses, ruins, cellars, or under logs of wood. Its poison is most deadly, and produces rapid paralysis of the nerves. The Cobra of India, a nearly allied species, is a favourite amongst the snake-catchers to the present day, and the art of serpent-

charming as practised there is probably the same as the ancient method. The process appears to be simple, requiring the notes of some high-pitched instrument to draw the serpent from its hole, a certain degree of dexterity in catching it by its tail and swinging it into a basket, and coolness and courage in subsequently handling it. The fangs are usually extracted, but they quickly grow again, and cobras are often exhibited in full possession of them. Cobras are very graceful in their movements, poising themselves almost upon their tails and swinging to and fro from side to side, with the skin of the neck distended over the raised anterior ribs into a sort of hood, without which movement they never attack. In this attitude the aspic is sculptured on many of the ancient Egyptian monuments, being evidently held in veneration, and regarded as an emblem of the goddess of protection to the fields of Egypt and the world at large. Amongst the Hindoos it is also held in awe, being regarded as the type of destruction and the incarnation of evil, and therefore to be propitiated.

The Hooded Cobra reaches a length of several feet. Fortunately it is rare in Palestine, but is known in the southern sandy wastes, whence it extends to Egypt and the Sahara. Amongst the Bedouins all creatures of the snake tribe are regarded as venomous, with hardly an exception. But none are armed with so fatal a poison as the cobra, and of the numerous snakes to be found from Jerusalem to Wady Arabah, probably not more than four or five are poisonous. [See ADDER.]

Ass (Heb. חֲמוֹר *chamor*, אָתוֹן *aton*, עַיִר *ayir*, פֶּרֶא *pere*, עָרוֹד *arod*).

The Ass is mentioned upwards of fifty times in the Bible, and from its having been selected as the animal

on which it pleased our Saviour to enter Jerusalem, it carries with it in some respects a higher degree of interest than any other. References to the ass may be grouped under five heads, according to the Hebrew names for the different sorts in the original. These are (1) CHAMOR, which is the ordinary name for the domestic ass, whether male or female, but more properly the male; (2) ATON, also a domestic ass, but rendered always a she-ass; (3) AYIR, a colt or young ass; (4) PERE, wild ass, and (5) AROD, another term for wild ass.

(1) Speaking of the ass, as met with at present in Eastern countries, one must dismiss the idea of the ordinary spiritless and degraded animal familiar to us in this country. Its degeneration here is no doubt partly if not mainly due to the climate, for the ass is a native of warm countries, and does not thrive in northern latitudes. But the ass is greatly stunted also in India, and it can hardly lay the blame solely at the doors of the coldness of the temperature there. No doubt its domestication amongst the poorer classes in this country, and its consequent life of hardship and insufficient food, have operated largely in the decay of the breed.

In Eastern countries, as Egypt and Syria, the ass is a far more valuable animal, well cared for and fed, and considerably larger in size than in this country. It is capable of a good day's journey at a moderate pace—either an easy canter or a less agreeable trot—with a man on its back, and it has a spirited demeanour and wide-awake manner which render it a pleasant quadruped to deal with. The breed is carefully selected, and a well-bred Syrian ass will fetch forty pounds. Their average height is perhaps two to three hands above that in this country. The Palestine asses are

the finest in the world. Their colour and markings are much the same everywhere, and no animal has changed so slightly under domestication as the ass. In Spain, where much care is taken in their breeding, the

EASTERN ASSES.

ass has been very carefully selected, and a stallion ass at Cordova has been sold for £200, according to Mr. Darwin. A white variety, though more delicate, is valued for its beauty in many parts of the East, and has been

always in much demand amongst the wealthy. Bagdad and Damascus boast of their white asses.

Deborah and Barak address the mighty ones in Israel as, 'ye that ride on white asses' (Judges v. 10).

Amongst the Jews the most honourable persons rode on asses, and it was also used for all purposes of agriculture and of carrying burdens. Abraham went on his ass from Beersheba to Mount Moriah (Gen. xxii. 3). Several of the judges and their families are spoken of as mounted on asses as a mark of distinction (Judges x. 4; xii. 14).

Asses were accounted valuable possessions, and herds of them are enumerated amongst the flocks of the patriarchs (Gen. xii. 16; xxiv. 35; xxx. 43). Women are also several times mentioned as being mounted on asses, as Achsah, the daughter of Caleb (Judges i. 14), and Abigail went out on her ass to see David (1 Sam. xxv. 20). The ass was not used for food except in cases of famine. It was rendered unclean by the Mosaic law.

(2) *She-asses* are specially mentioned on several occasions. Balaam rode on a she-ass from Chaldæa to Moab (Numb. xxii. 21); the wealthy Shunammite saddled a she-ass on her errand to Elisha (2 Kings iv. 24); Saul sought the she-asses of Kish (1 Sam. ix. 3); and those were she-asses over which Jehdeiah the Meronothite was in charge for King David (1 Chron. xxvii. 30). She-asses were probably more valuable than males; among the herds of Job, after sheep, camels, and oxen, a thousand she-asses are mentioned.

(3) Young ass. The name for a young ass occurs several times in the Old Testament. Sometimes, as in Judges x. 4; xii. 14, ass colts are used for riding upon,

and in Isaiah xxx. 6, young asses are spoken of as carrying burdens, and again (ver. 24) as tilling the ground. The wildness of the colt of the wild ass is proverbial in Job xi. 12. Our Saviour made His triumphant entry into Jerusalem upon a colt the foal of an ass, and the animal selected was not typical of meekness, but honourable and suitable in dignity to bear the King of Israel. Horses were more generally used for war purposes, and the ass may be regarded as emblematic of peace upon this occasion. The dam was also taken, to render the colt tractable.

(4 and 5) Wild ass. The word *arod* for wild ass occurs twice, in Job xxxix. 5, and Daniel v. 21. We read in Daniel that Nebuchadnezzar dwelt with the wild ass. In Job the two names are used apparently synonymously, though it is possible two different species of wild ass are meant.

The usual term *pere* occurs often, and in several places animated and accurate accounts of the habits of the onager or wild ass are given. In the chapter of Job already quoted a vivid description is set down, and one which is entirely in accordance with the observations of recent travellers. Elsewhere in the same book we are told they inhabit the desert (xxiv. 5), and in Isaiah that they sought shelter and made dens amongst ruins in the desert (xxxii. 14). Jeremiah also speaks of the 'wild ass used to the wilderness,' and in their fleetness they snuffed up the wind like dragons (Jer. ii. 24; xiv. 6).

The wild ass is not now met with in Palestine, nor yet in the Sinaitic Peninsula; but in former times, to judge from the frequency and familiarity of the allusions to it, it can hardly have been rare. As we go eastwards we

meet with the wild ass of Assyria; *Equus hemippus* of St. Hilaire. 'They are gone up to Assyria, a wild ass alone by himself' (Hos. viii. 9). The onager (*Equus onager*) is closely allied to this variety, occurring in Persia and Western India. Also the *Equus tæniopus* of Abyssinia and North Africa, differing only slightly from the onager, and the parent of the domestic ass, must have been known to the ancients; and it has been suggested that this latter was the *arod*. In all probability the Assyrian ass had a wider range westwards, and was the *pere*, or common wild ass. The wild ass of Abyssinia differs from the other species in having stripes on the hind legs. Another species is the wild ass of Thibet; it is larger than the rest.

The Assyrian ass is possessed of extraordinary fleetness, and can outstrip all but the very swiftest of horses. They roam, as well as the other wild asses, over wide areas of desert, moving north and south according to the season, for better feeding-grounds. In colour they are nearly similar to the ordinary domestic animal.

BADGER (Heb. תַּחַשׁ *tachash*).

Badger is several times used in Scripture as the translation of the Hebrew word *tachash*. It is used always in connection with the term עֹרֹת *oroth*, signifying skins, and is spoken of as being the material employed in covering the tabernacle and the vessels used in connection with it in the wilderness. 'They shall put it and all the vessels thereof within a covering of badgers' skins' (Exodus xxv. 5; xxvi. 14, &c.; Numbers iv). In Ezekiel xvi. 10, it is employed for making sandals for Jewish women: 'I clothed thee with broidered work, and shod thee with badgers' skin.'

The signification of this term *tachash* has given rise to much controversy into which this is not the proper place to enter. It may be stated, however, that none of the versions acknowledge an animal of any kind to be intended except the Chaldee, which supposes the badger to be referred to; and from it we have borrowed our translation of the word. The Septuagint and Vulgate have *skins dyed of a violet colour*; the Syriac, *azure*; the Arabic, *black*; and so on[1]. One of the arguments further urged against the 'badger' amongst some of the authorities is that the animal does not occur in Palestine. But this is an incorrect statement, since Canon Tristram finds that a badger, apparently identical with our own species, is common in Palestine, although perhaps hardly reaching to Sinai. Being nocturnal in their habits, badgers are not readily observed. Nevertheless, the trouble of procuring them, their unsuitability in size, and their undoubted scarceness in Sinai, where they were really required, render it impossible that this could have been the animal meant.

The present Arabic term تُحَس *tuchash*, or دُحَس *duchash*, is a general name for the dolphin; and other large sea animals, such as seals, cetaceans, porpoises, appear to be included under it. [See WHALE.] The skins of some of these animals are used for such purposes as making sandals to the present day in the Sinaitic district. The Dugong (*Halicore*) is so employed, but it is coarse and unpliable in texture, and seems scarcely suitable for ladies' slippers or for wrapping up costly

[1] Dr. A. Clarke, quoted by Dr. Harris in his *Natural History of the Bible* (1824). This exhaustive and learned work of Dr. Harris appears to have afforded much unacknowledged information to subsequent writers. Modern researches have no doubt corrected many of his views, but as a storehouse of antiquarian lore on the subject the book is most valuable.

utensils. In all probability some species of the marine mammalia, possibly the monk seal, but more likely the dugong or the porpoise, was capable of being prepared for such purposes, and wherever these animals occur some one or other is usually made use of by the inhabitants. This appears to be the view taken by the compilers of the Revised Version, who have altered the text to 'sealskin.' I would prefer to read dugong, unless we are to suppose that sealskins were an imported article.

BAT (Heb. עֲטַלֵּף *atalleph*).

The Bat is spoken of as one of the fowls that may not be eaten in Deut. xiv. 18, and Lev. xi. 19. Being winged, it was no doubt included amongst fowls, although a mammal. The subsequent verse of Leviticus classes it amongst 'fowls that creep, going upon all four.'

The Bat is alluded to in company with moles, as inhabiting holes and cavities about ruins, where 'a man shall cast his idols of silver and his idols of gold . . . to the moles, and to the bats; to go into the clefts of the rock and into the tops of the ragged rock' (Isa. ii. 20, 21).

Bats, it is well known, resort to caves, ruins, and deserted buildings for shelter by day, being nocturnal in their habits. In this country, where we have several species they hybernate during the winter, owing to the coldness of the climate, and in North and Central Palestine they do the same, but in the sub-tropical district of the Ghor they are active during the winter, but by no means common.

Seventeen species have been enumerated from Palestine, and no doubt more will be discovered. Several of

these are sorts found in England, as, for instance, the common Long-eared Bat (*Plecotus auritus*), which is frequently to be seen about the Sea of Galilee. One or two others, the Serotine and the Greater Horse-shoe, are also found in both countries ; but the majority of the Palestine bats are more southern and eastern in their range.

The extraordinary power possessed by bats of threading their way through the darkest caverns has been the subject of numerous experiments, and it has been demonstrated that it is by an extreme sensibility to touch that they guide themselves. This exceptional development of the sense of touch resides chiefly in the membranous expanse of wings, but also in the enlarged ears and peculiar leaf-like nasal appendages found in some groups of the order.

A very large number of bats have been described from various parts of the world. The great majority of them feed upon insects, but some are frugivorous, and a few live, in part at any rate, upon the blood of other animals.

Bats have been regarded as birds from the earliest times down to the middle of the seventeenth century, or in some cases, as that of Plato, as neither bird nor beast. Ray, the eminent zoologist, was the first (1683) who placed them in their proper position amongst the mammals, of which they form a distinct order according to modern naturalists.

The bats of Palestine belong chiefly to the genera *Vespertilio*, *Rhinolophus*, *Plecotus*, *Rhinopoma* and *Taphozous*.

BEAR (Heb. דֹּב *dob*).

From the frequent mention of the Bear in Scripture, and its occurrence in Central Palestine being apparently

BATS.

nothing unusual, we learn that it must have been, like several other larger wild animals, common where it is now very rare or hardly known. At present we must visit the more secluded wooded fortresses of Hermon and Lebanon, especially the former, before we meet with the Syrian bear in its native haunts. David (1 Sam. xvii. 34) tells us that he had to defend his flocks against the bear as well as the lion, and further in 2 Kings ii. 24 it is narrated that 'there came forth two she-bears out of a wood and tare forty and two of them,' when the children of Bethel mocked at Elisha in the way between Jericho and Bethel. There is now no timber in Judæa, and thus we learn the immediate cause of the extirpation of these animals, in the gradual destruction of the shelter necessary to their existence. East of the Jordan the bear is stated to exist still in several districts.

A characteristic of the Bear used as a simile several times in the Scriptures is its ferocity when deprived of its young. 'Let a bear robbed of her whelps meet a man, rather than a fool in his folly' (Prov. xvii. 12). And again, 'They be chafed in their minds, as a bear robbed of her whelps' (2 Sam. xvii. 8). And, 'I will meet them as a bear that is bereaved of her whelps' (Hos. xiii. 8).

The Syrian Bear (*Ursus Syriacus*) is a distinct species from the Brown Bear of Europe, than which it is slightly shorter in the limb and of a paler colour, being of a yellowish brown or dirty yellow hue, which varies somewhat with age, sex, and season. Its claws also are smaller than those of the European Bear, and, like it, it subsists on vegetable diet, except when pressed by necessity to seek animal food. It is said to extend to Northern Persia, and a slightly different paler variety

(*U. isabellinus*) is found in the Himalayas. A very fine specimen of the Syrian Bear was recently to be seen in the Zoological Gardens in Regent's Park.

BEAST. See BEHEMOTH, CATTLE.

BEE (Heb. דְּבוֹרָה *deborah*).

Bees are mentioned directly only four times in Scripture, but honey is spoken of as an abundant and favourite article of food amongst the people of Palestine. In two of the passages where bees are mentioned they are spoken of as the natural enemies of mankind; 'the Amorites chased you as bees in Seir' (Deut. i. 44), and 'they compassed me about like bees' (Ps. cxviii. 12). In Judges xiv. 8, when Samson 'rent the young lion' and returned after a time, he found 'there was a swarm of bees and honey in the carcase.' There is nothing impossible in this occurrence. In the extreme dry heat of summer in this climate, a very short time would suffice to dry up a carcase so completely that the cavity of the body might serve for such a purpose. In a passage of Isaiah, the prophet tells us that 'The Lord shall hiss for the fly that is in the uttermost part of the rivers of Egypt, and for the bee that is in the land of Assyria' (vii. 18), speaking of them as scourges to overrun the land. The word 'hiss' is equivalent here to 'signal' or 'call,' as *hiss* or *hist* is the manner of arresting a person's attention in the East, just as *holla* or *hi* with us.

In the majority of allusions the Bee is viewed as a dangerous annoyance, and nowhere is it referred to as a parallel emblem of industry and instinct with the ant, as we are accustomed to regard it.

Bees are very numerous in Palestine. The warm

climate and the profusion and variety of wild flowers, of which a large number are sweetly scented or aromatic, render it well fitted to be 'a land flowing with honey.' Their nests are commodiously placed in the crevices of the limestone which prevails in Judæa, and which lends itself naturally for such a use. The genera *Bombus* (Humble Bee), *Nomia*, *Andrena*, *Osmia* (Mason Bee), *Megachile* (Leaf-cutters), *Anthophora* are all largely represented.

Wild honey is abundant, and in some places bees swarm on the cliffs in such numbers that no one can be found hardy enough to pilfer the nests. From the earliest times the honey-bee was kept in hives and honey was produced in captivity. The Hive-bee of Palestine appears to be a variety of the Hive-bee of this country, and probably the same as the Italian or Ligurian bee of Southern Europe. The southern form (*Apis ligustica*) varies in being more brightly coloured and having yellow transverse bands on the abdomen. There is another banded variety in Africa, and they are perhaps all derived from the ordinary Hive-bee (*Apis mellifica*), wherever it may have originated. The Hive-bee has been known through all history, and though sometimes found in warm climates apparently wild, it is perhaps only where it has escaped from cultivation.

Wild honey is, and no doubt always was, largely used and always to be had ; and from the total lack of reference to apiculture in the Bible it seems not unreasonable to conjecture that it formed in ancient times the major portion of the supply. In some passages where the word דְּבַשׁ *debash*, which is translated 'honey,' occurs, the term is believed to refer to a decoction of the juice of the grape still known amongst the Arabs as دِبْس *dibs*.

The method of keeping domesticated bees in Galilee is thus described by Canon Tristram : 'The hives are very simple, consisting of large tubes of sun-dried mud, about eight inches in diameter and four feet long, closed with mud at each end, having only an aperture in the centre, large enough for two or three bees to pass at a time. These tubes are laid in rows horizontally, and piled in a pyramid . . . When the hives are full, the clay is removed from the ends of the pipes, and the honey extracted with an iron hook.'

Bees form the family *Apiariae* of the Aculeate section of Hymenopterous insects. They are divided into two great groups, in one of which (the typical bees) the tongue is long and slender, and in the other, short and broad. Like the ants, three adult forms are found in their colonies, males, females, and workers, or undeveloped females. Of the architecture of bees and the marvellous instinct that prompts it, the distribution of labour in forming the cells and preparing for the deposition of eggs therein, the care of the young, the 'clustering,' 'swarming' and 'nuptial flight,' and many other interesting details, there is no space here to treat. The subject is one to which a book the size of the present volume might be easily devoted[1].

### Beetle (Heb. חַרְגֹּל *chargol*).

The Beetle is enumerated in Lev. xi. 22 as one of the 'flying creeping things that goeth upon all four, which have legs above their feet, to leap withal upon the earth.' In company with the locust and the bald locust it was one of the beasts allowed for food. The word translated

[1] See *The Honey Bee*, published by the Religious Tract Society.

beetle does not occur elsewhere in the Bible, and it is evident that it is wrongly translated so, since the beetle would not come under the description of a leaping insect. The Revised Version has altered the text to 'cricket,' an insect which belongs to the same division of the *Orthoptera*, as the locust and grasshopper, called the *Saltatorial Orthoptera*. *Gryllidae*, or Crickets, are abundant in Palestine, both in number and variety. The emendation is therefore one that may be accepted, so far as zoological propriety goes.

BEHEMOTH (Heb. בְּהֵמוֹת *behemoth*).

This word is translated in several passages in the Bible either as 'domestic cattle' or 'any large quadruped,' as in Gen. vi. 7, Ex. ix. 25, Lev. xi. 2, 1 Kings iv. 33. In other places it denotes horses, mules or other 'beasts of burden,' as in 1 Kings xviii. 5, Neh. ii. 12. But in the Book of Job the word is left untranslated, since it is evidently descriptive of a particular animal; and there can be no question that the vigorous portrait supplied us in Job xl. 15–24 is that of the River-horse or Hippopotamus.

Amongst the early critics a dispute was waged as to the relative claims of the elephant and the hippopotamus for the title of Behemoth. One commentator writes, 'It is most probable that the behemoth is at present a genus altogether extinct, like the mastodonton or mammoth.' Another suggested the wild buffalo. Recent writers, however, all agree that the hippopotamus agrees entirely with all the details given, and that no other animal could have been intended. 'Behold now behemoth, which I made with thee; he eateth grass as an ox. Lo now, his strength is in his loins, and his

force is in the navel of his belly. He moveth his tail like a cedar: the sinews of his stones [ thighs, R. V.] are wrapped together. His bones are as strong pieces of brass; his bones are like bars of iron. He is the chief of the ways of God: He that made him can make his sword to approach unto him, [hath furnished him with his sword or tooth, R.V.] Surely the mountains bring him forth food, where all the beasts of the field play. He lieth

THE BEHEMOTH.

under the shady trees in the covert of the reed and fens. The shady trees cover him with their shadow; the willows of the brook compass him about. Behold, he drinketh up a river, and hasteth not: he trusteth that he can draw up Jordan into his mouth. He taketh it with his eyes: his nose pierceth through snares.'

The writings of African travellers, and the examples to be seen in the Zoological Gardens, have familiarized

everyone with the Hippopotamus. There are two closely allied species, both of which are found only in Africa. The Hippopotamus, along with the pigs and peccaries, form a group in zoological classification, the non-ruminant *Artiodactyls*, or even-toed animals which do not chew the cud, amongst the order *Ungulata*, or hoofed quadrupeds. The skeleton of the hippopotamus is very like that of the hog. In spite of their enormous size they are, like the elephant and rhinoceros, capable of moving very swiftly on the land. They are nocturnal in their habits, and rarely leave the rivers or lakes which they inhabit except at night, when they sometimes commit great depredations upon crops. The stomach is capable of holding about six bushels, and their favourite food is young herbage, grass, and especially green corn. They can remain a long time under the water before requiring a breath, and they are provided with muscles by which the ears and nostrils are closed while they are immersed.

The Hippopotamus was in great demand amongst the Romans for exhibition at their games and in the circus. It was obtained from Egypt. Milton speaks of Behemoth ambiguously, perhaps as the elephant:

> 'Scarce from his mould
> Behemoth, *biggest born of earth*, upheaved
> His vastness: fleeced the flocks, and bleating, rose
> As plants: ambiguous between sea and land
> The *river horse* and scaly crocodile.'

In modern times these animals have been kept in confinement in this country from the year 1850, when the first seen alive in Europe since the time of the Roman exhibitions was brought to Europe from the Upper Nile. Amongst the ancients many fabulous descriptions are given of the hippopotamus. Aristotle speaks of it as

having a mane like a horse and a bifurcated hoof. Pliny follows Aristotle, but adds that it is covered with hairs. Coming down to a more recent period, we have Topsell's description of the Sea-horse in his *History of Four-footed Beasts*, first printed, 1607. 'The Sea-horse is a most ugly and filthy beast, so called because in his voyce and mane he resembleth a horse, but in his head an ox or a calf, in the residue of his body a swine. It liveth for the most part in Nilus; yet it is of a doubtful life, for it brings forth and breedeth upon the land, and by the proportion of its legs it seemeth rather to be made for going than swimming; *for in the night-time it eateth both hay and fruits, foraging into corn-fields and devouring whatever cometh in the way.*'

Several other Hebrew words are translated 'beasts' besides *behemoth*, which is generally so rendered. בְּעִיר *beîr* is used collectively of all kinds of domestic cattle, like the Latin *pecus*, e.g. 'If a man shall put in his beast [cattle] and shall feed in another man's field' (Exod. xxii. 5, Numb. xx. 4, 8, 11, and Ps. lxxviii. 48). Sometimes *beîr* signifies beasts of burden, as in Gen. xlv. 17, 'This do ye, lade your beasts and go.' חַיָּה *chayyah* is used to denote any living thing. Generally it is used to imply wild beast, sometimes more emphasized by the addition of the word הַשָּׂדֶה *hassâdeh*, 'of the field,' as in Hos. xiii. 8, 'The wild beasts shall tear them,' and in Exod. xxiii. 11, 'And what they leave the beasts of the field shall eat.' So also in Deut. vii. 22, Jer. xii. 9, and elsewhere. In other passages the word זִז *ziz*, 'moving things,' literally, is translated 'wild beasts' in Ps. l. 11 and lxxx. 13. In other places אִיִּים *îyyîm* denotes a particular wild beast, e.g. 'The wild beasts of the islands' in Isa. xiii. 22 and xxxiv. 14, and in Jer. l. 39. The

meaning of *îyyîm* is 'howlers,' and, according to Canon Tristram, this is undoubtedly the *jackal*. One of the Arabic names (آوِي *wawi*) of the jackal is 'the sons of howling;' and there can be no question to anyone who has ever sojourned in Palestine what animal is meant by the 'howler.' It is often mentioned in Scripture under the name of שׁוּעָל *shual*, which is, however, always translated 'fox.' In two of the passages mentioned above, where *îyyîm* occurs, the 'wild beast of the island' is contrasted with צִיִּים *tsiyyîm*, translated 'wild beast of the desert.' This latter also occurs in Isa. xiii. 21, 'But wild beasts of the desert shall lie there;' and it is probable that the term also stood for some special animal, possibly the hyena, which is common in all parts of Palestine, and resorts to old tombs, ruins, and desolate places. [See JACKAL, HYENA.]

In the Revised Version the translation 'jackal' has been adopted for the word *îyyîm* in the two passages in Isaiah; and it appears to be an inconsistency to render it 'wolves' in Jer. l. 39. Either the old reading, 'wild beasts of the islands,' should remain unaltered, or else the change should have been harmoniously effected. The wolf is often mentioned under its Hebrew name זְאֵב *zeêb* in the Bible, and never alluded to as a 'howling animal,' which is the literal interpretation of the word *îyyîm*. The high-pitched howl of the jackal is a thing that no one who has tented out in Palestine can ever forget. At the Ghor es Saffieh, at the south end of the Dead Sea, it was more continuous and less propitious for sleep, than elsewhere. A small breed of Bantam fowl crowed there very loudly, and it appeared to me that both animals pitched their screams in about the same key. The donkey of the Ghor brays

too in an unusually shrill manner. Perhaps the excessive pressure of the atmosphere there ($32\frac{1}{4}$ inches) may in some way offer an explanation of this phenomenon.

BIRDS. See FOWL.

BITTERN (Heb. קִפּוֹד *kippod*).

The word translated 'bittern' bears so close a resemblance to the Arabic قُنْفُذ *kunfood*, signifying 'hedgehog' or 'porcupine,' that it has been asserted that the latter should be the rendering; but this the context seems to render impossible; 'I will also make it a possession for the bittern and pools of water' (Isa. xiv. 23). Neither the hedgehog, nor the porcupine frequents pools of water. Nor would either of these animals be associated naturally with the cormorant (or pelican): 'But the cormorant [pelican] and the bittern shall possess it; the owl also and raven shall dwell in it' (Isa. xxxiv. 11). In this latter passage the change would be less open to objection, but seems undesirable unless the philological argument demands it. The Revisers have adopted the change in their version in both places, as also in 'the cormorant [pelican] and the bittern shall lodge in the upper lintels of it; their voice shall sing in the windows' (Zeph. ii. 14), which appears in the R. V., 'the pelican and porcupine shall lodge in the chapiters; their voice shall *sing* in the windows.' Both porcupine and hedgehog are common enough in Palestine; but, in spite of the similarity of the Hebrew and Arabic words, neither of them can be suitably introduced in place of the bittern. Neither of them sing, or climb up columns to build, or frequent pools of water. Canon Tristram decides on retaining the bittern, in his *Natural History of the Bible*,

but, in his *Fauna and Flora of Palestine*, he says that *kippod* is erroneously translated 'bittern,' and should be rendered 'hedgehog.'

There are two species of Bittern, the Little (*Botaurus minutus*) and the Great (*B. stellaris*), in Palestine and Egypt. The Little Bittern is of rather rare occurrence in Egypt, but the larger species is plentiful. Both these species occur occasionally in the

BITTERN.

British Islands, the Little Bittern chiefly as a summer visitor, the Common Bittern as a winter one. The latter was in former times abundant, before the spread of cultivation and the drainage of marshes, especially of the fen districts. It is a skulking species, scarcely coming abroad in the daytime, unless disturbed, from its hiding-place in rushes, tall sedges, &c., and feeding at night. It is an especially shy bird, and typical of loneliness and desolation. During the night, at its feeding-grounds, it makes a loud booming noise, which earned for it formerly the name of Butter Bump, and was said to be as loud as

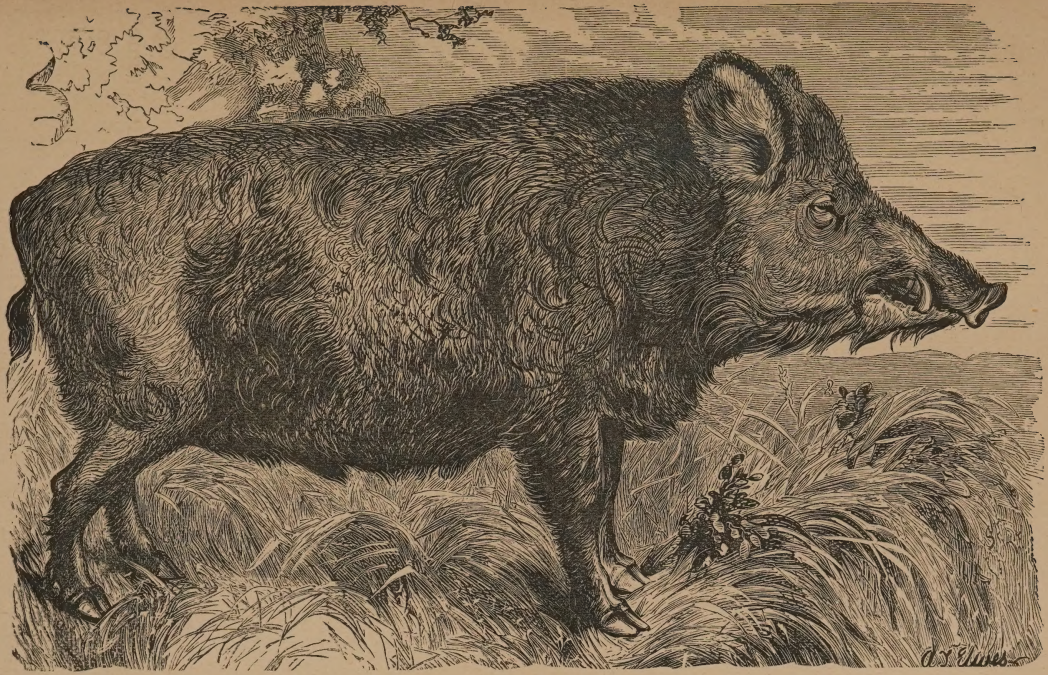
the roar of a bull, and to be produced by the bird burying its beak either in a hollow reed or in the mud; but this has been shown to be incorrect, though still widely believed. The bittern was formerly in some request for the table, and esteemed better eating than the heron. It was a favourite quarry in the days of falconry.

BOAR, WILD (Heb. חֲזִיר *chazîr*; Arab. خنزير *chanzîr*).

Both the above terms are also applied to domesticated swine. The Wild Boar is mentioned in a single passage only, where the Psalmist complains that the Lord of hosts 'hast brought a vine out of Egypt . . . and planted it. . . . The boar out of the wood doth waste it, and the wild beast of the field doth devour it' (Ps. lxxx). In the marginal reading of Ps. lxviii. 30, the 'beasts of the reeds' in all probability refers to the wild boar.

The wild boar is still common in many parts of Palestine, wherever there is sufficient cover. It is found in the woods of Mount Tabor and along the coverts by the Jordan from Gennesaret to the Dead Sea. It is especially common in the cane-brakes of the Ghor es Saffieh at the south end of the Dead Sea; but so wary is the animal that, although frequently heard crashing through the reeds, we rarely obtained a sight of it. On one occasion, when crossing the plains of Judæa, a sow and her litter were disturbed in a shallow wady, where they were feeding on a bulb which they especially delight in, that of the wild tulip (*Tulipa Gesneriana*).

The illustration of the Psalmist is peculiarly apt. No animal could create so much destruction in the same space of time in a vineyard as a wild boar; and on account of its ravages in crops, as well as because of the abhorrence with which all Easterns regard it, it is



THE WILD BOAR.

destroyed by all available methods. The result of this perpetual warfare is that they are excessively hard to dislodge from their lairs, and as long as any cover remains they are safe from extermination.

The Wild Boar has a wide geographical range, inhabiting Europe, North Africa, and Asia to Hindostan, excepting the colder regions. Each of these countries, however, affords a peculiar race. It feeds almost entirely on vegetable matter, but when pressed by hunger is omnivorous. It formerly inhabited Great Britain, and has been exterminated from Ireland only about two centuries. In India the chase of the wild pig affords the most exciting sport to be had.

The domestic pig is now believed to be derived from two of the wild races, the Indian and the European.

There is no animal spoken of with such abhorrence in the Bible as the hog. It is forbidden as unclean by the Mosaic law (Lev. xi. 7; Deut. xiv. 8). And in several passages the eating of swine's flesh is alluded to as the very acme of abomination (Isa. lxv. 4; lxvi. 3, 17). The most orthodox Jews of old would not even name the animal, but referred to it as 'the abomination.' Again, if a comparison is to be made, the swine is quoted sometimes as the proverbial incarnation of uncleanliness: 'as a jewel of gold in a swine's snout, so is a fair woman without discretion' (Prov. xi. 22); and compare also Matt. vii. 6 and 2 Pet. ii. 22 in the New Testament.

Nevertheless, in later times we find that swine were kept in herds in Palestine. We observe this in the case of the parable of the prodigal son, and also when our Lord caused the evil spirits to enter into the swine belonging to the Gergasenes. These no doubt were kept for trade with the heathen population of Palestine. At

the present time the pig is never met with, or exceedingly rarely in the Holy Land. None came under our notice during a somewhat extended tour, and Canon Tristram speaks of having seen a single one by the coast at Caiffa. Swine were forbidden for food on the technical ground that they were not ruminants, although cloven-footed ; but it is not unlikely that their use may have been found to promote the dreaded leprosy, since it is stated that in hot countries those who eat this flesh are liable to affections of the skin.

In the two instances noted above of the keeping of swine in the time of our Lord by the Jews, it is to be observed, that in one case the swine are entirely destroyed —no doubt as a punishment—and in the other they are introduced as a means of inflicting the utmost possible degradation, that of herding swine, upon the prodigal son.

BULL, WILD. See PYGARG.

CAMEL (Heb. גָּמָל *gamal*).

*Gamal* (Arabic جمل *gemel*) is the common Hebrew name for this most valuable of all animals in the desert regions of the East. The word includes every creature of the kind, whatever the species, sex, age, or breed ; and the name of the animal is retained with little alteration in modern languages.

Another word בֶּכֶר *beker*, or its feminine בִּכְרָה *bikrah*, occurs twice, and is translated 'dromedary' (Isa. lx. 6, Jer. ii. 23).

Camels were used for a variety of purposes. They served for riding, as when in 1 Sam. xxx. 17 David smote the Amalekites which had spoiled Ziklag, 'and there escaped not a man of them, save four hundred young men,

which rode upon camels and fled.' And in Esth. viii. 14, 'the posts that rode upon mules and camels.' In this latter passage the word has given rise to some dispute. It is (אֲחַשְׁתְּרָנִים *achashteranim*) rendered 'swift steeds' in the Revised Version. Camels were employed as beasts of burden generally, the purpose for which they are most valuable and best adapted. The load is placed either on a saddle or pavilion affixed to or round the hump, or depends on either side of the animal in panniers or creels. The enormous masses of gear, furniture, agricultural utensils or produce, or other impedimenta, that can be piled upon the back of a camel is most astonishing to a new-comer in such places as Jaffa, Beyrout or Smyrna. Small camels are loaded up to 800 lbs., large ones to half a ton. With this load they will travel thirty to thirty-five miles a day at a uniform pace of about three miles an hour. Those which are used for riding at speed are lighter built and bred for the purpose. They are usually called dromedaries (though this name properly belongs to all Arabian camels), and will travel from sixty to ninety or even a hundred miles in a day. The pace is about eight miles an hour.

Camels were also used for draught. 'A chariot of camels' is mentioned in Isa. xxi. 7. Probably they were also used for agricultural purposes. I have seen them yoked to the plough or bush-harrow both in Southern Judæa and in the Ghor es Saffieh, at the south end of the Dead Sea. But the valuable qualities in the camel are its powers of weight-carrying and of subsisting without food or drink for comparatively long periods without injury. Camels have been known to travel as many as ten days without water. The Arabian camel is furnished with a series of water-cells lining the first stomach, which are capable

of carrying as much as a gallon and a half of water as a reserve. The 'bunch' or hump on the back is composed of fatty cells, and is a reserve of food—fat and plump when the animal is well fed and lightly worked, shrivelling to nothing after hard work and bad feeding. In the Arabian camel, the only one met with in Palestine or south of it, the hump is single. In the Bactrian camel, which is found east and north of Arabia, it is double. The Arabian camel, or 'Ship of the Desert,' is found from North-west Africa to India.

Camel's flesh was forbidden for food; 'because he cheweth the cud, but divideth not the hoof, he is unclean to you' (Deut. xiv. 7, Lev. xi. 4). It is eaten now, when better cannot be had, in most parts of the East, but the meat is said to be very coarse and dry. The camel's colt is, however, esteemed by the Arabs as a great luxury. The milk is much more used, and though strong, is excellent. Camel's milk was no doubt used by the Jews. We read in Gen. xxxii. 15, that Jacob 'took a present for Esau his brother ... thirty milch camels with their colts.'

Camel's hair is in use for the manufacture of various materials by the Arabs, such as saddle-bags, both for donkeys and camels. The Ghawarneh Arabs at the Dead Sea used tents made of this material. These saddle-bags are usually red, black and white, and fringed with long pendent tassels, which sweep the ground almost, and are supposed to heighten the dignity of the sheikh perched above. Other decorative trappings of shells or silver laid on bright-coloured bits of cloth are stitched on to the halter or suspended from the neck. This custom has lasted since the time of Gideon. See Judg. vii. 21, 26. The substance to which the hair is woven is coarse and unyielding, and would furnish

neither warmth nor comfort as raiment. John the Baptist we are told, 'was clothed with camel's hair' (Mark i. 6), and again, 'the same John had his raiment of camel's hair' (Matt. iii. 4). This substance is made by the Arab women. The skin of the camel is valuable for many purposes. Of it are made tents, shields, harness, saddles, trunks, &c. Camels were always, as they are now, the carriers for traders and caravans in the Eastern countries. We read in Gen. xxxvii. that Joseph was sold to 'a company of Ishmaelites from Gilead, with their camels bearing spicery and balm and myrrh, going to carry it down to Egypt.' The wealthier among the patriarchs owned large herds of camels. Job possessed six thousand. The sons of Reuben took from the Hagarites when 'they were delivered into their hands, of their camels fifty thousand' (1 Chron. v. 21). At this day the Beni Sakker Arabs who inhabit the country of the Hagarites of old, the western Belka, are said to possess 100,000 camels; while the sheikh of the Anazeh, the purest of the Bedouin tribes, who inhabit the country west from Damascus to Palmyra and on to the Euphrates and the plateau of Nejd, can muster a force of 10,000 horsemen and 90,000 camel-riders.

It is commonly supposed that the camel is fitted only to traverse tolerably level or even ground. This is not by any means the case. The camels of Sinai can pick their way with extraordinary sure-footedness amongst boulders and in rocky places which would puzzle many a mountain pony. They move with extreme caution, and seldom or never make a mistake. The ascent of Mount Hor is in some places a remarkable test of a camel's skill in climbing. Watery or muddy ground is the one obstacle which they will not face, and in

presence of which they are completely helpless. The broad, elastic, cushion-shaped foot, so admirably fitted as a pad for stony or smooth dry ground, becomes most dangerous in anything of the nature of sliminess.

Camels are so well known, that description is unnecessary. The head is usually carried nearly on the level with the hump, but when raised is almost nine feet from the ground, and they are thus often enabled to browse upon the very tops of the stunted acacias and tamarisks in the desert.

The camel is an intensely stupid animal, and is only docile because it has no originality. It never becomes attached to its rider, and in that respect is only half domesticated. It is entirely devoid of sympathy, and the attempt to guide it into any sort of understanding with its master, such as a dog or a horse instinctively at once acquires, is at all times a failure, and resented with screams and bites. The odour of the animal is rank, and its annoying habit of swerving from its track with a jerking bite at every morsel of green food, renders its jolting pace, which most people find very disagreeable, still more so. It may be called a patient animal, but the patience becomes at times a most extraordinarily immovable obstinacy, and there are well-authenticated instances of its having cherished a revengeful spite against a driver who has corrected it till its opportunity arrived months later, and woe to the arm or leg which receives the bite of a camel!

The camel rests kneeling upon its chest, elbows, knees, and hocks, and upon these there are indurated callous pads of thickened skin. It is when in this position that the animal is loaded, and the rider gets upon the padded wooden frame with an upright support in front which

is called the saddle. The camel is not bitted, but guided by a string attached to a noose fitted tightly round the nose. Guidance is, in fact, of very little use, as the animal is exceedingly difficult to direct in any way except that which it proposes to follow; either some obvious well-known track, or else the line of the caravan. Camels have been used by man as far back as the earliest records take us, nor is there any evidence as to their original home, or the period or people by whom they were first domesticated. The animal, however, never appears upon the early Egyptian monuments; and this, coupled with other testimony, proves 'the remarkable fact in the history of cultivation, that the camel was first introduced into Africa as late as the third century of the Christian era, although that animal seems expressly made for the Libyan desert[1].'

The camels with the llamas form together a group called the *Tylopoda*, or callous-footed, which differ from the other ruminants in having the feet protected by a hardened skin instead of by hoofs, as well as in some other particulars.

CANKERWORM (Heb. יֶלֶק *yelek*). See LOCUST.

CATERPILLAR (Heb. חָסִיל *chasil*). See LOCUST, WORM.

## CATTLE.

Under this heading may be considered horned cattle of whatever age or sex. There are several Hebrew words in use to express the different sorts. *Behemoth* has been already dealt with; it is usually translated 'beasts,' and includes other domestic quadrupeds. We

[1] *Wanderings of Plants and Animals.* By Victor Hehn. London, 1885.

have also שׁוֹר *shor*, an ox, whether cow or bull, of any age. תּוֹר *tor* (Lat. *taurus*), which is the Chaldee form of *shor*, occurs only in the later books, Ezra vi. 9, 17, vii. 17; and Dan. iv. 25, 32, 33. אַבִּירִים *abbirim* implies strength, and is occasionally translated 'bulls' (Ps. xxii. 12, l. 13, lviii. 30; Isa. xxxiv. 7; Jer. l. 11). 'Many bulls have compassed me: strong bulls of Bashan have beset me round,' &c. בָּקָר *bakar*, herds of cattle or oxen full grown, irrespective of age or sex. This term is almost invariably equivalent to the word 'herd,' and is derived from a root meaning 'to plough.' פַּר *par*, a young bull, generally spoken of a bullock for sacrifice, as the female פָּרָה *parah* is of the heifer or young cow for the same purpose. עֶגֶל *egel*, עֶגְלָה *eglah*, a male or female calf, properly of the first year; it is used of a trained heifer (Hos. x. 11), of a milch cow (Isa. vii. 21, 22), of a heifer used at the plough (Judg. xiv. 18), and of a three-year old (Gen. xv. 9).

In consequence of its great use in all farming operations the ox was the most important animal in the domestic economy of the ancient Israelites. Oxen performed all those agricultural duties which horses do with us. They were used for ploughing, 'Thou shalt not plough with an ox and an ass together' (Deut. xxii. 10); and 'Elisha, the son of Shaphat, was ploughing with twelve yoke of oxen before him' (1 Kings xix. 19). Also they were used for treading out corn: 'Thou shalt not muzzle the ox when he treadeth out the corn' (Deut. xxv. 4); 'Ephraim is as an heifer that is taught, and loveth to tread out the corn' (Hos. x. 11); also for draught purposes, usually yoked in pairs, 'And they brought their offering before the Lord, six covered wagons and twelve oxen; a wagon for two of the princes,

and for each one an ox' (Numb. vii. 3, and see 1 Sam. vi. 7, &c.); the flesh was eaten, 'These are the beasts which ye shall eat: the ox, the sheep, and the goat' (Deut. xiv. 4, and see 1 Kings i. 9, &c.); as beasts of burden, 'They brought bread on asses, and on camels, and on mules, and on oxen, and meat, meal,' &c. (1 Chron. xii. 40). They were used for sacrifices, and milk and butter were derived from them. Abraham and the wealthier patriarchs offered them (Gen. xv. 9). They had very considerable herds of cattle, of which a large portion were required for sacrifice or for occasions of public hospitality, or special feasts, or to entertain a friend. For this latter purpose a calf was usually killed (Gen. xviii. 7, Luke xv. 30). We are told that 'Solomon offered a sacrifice of two and twenty thousand oxen and an hundred and twenty thousand sheep' (1 Kings viii. 63) at the dedication of the temple, while at its cleansing 'the consecrated things were six hundred oxen and three thousand sheep' (2 Chron. xxix. 33).

Oxen were, in consequence of their high importance, protected by a strict code of laws. 'Thou shalt not muzzle the ox when he treadeth out the corn' (Deut. xxv. 4); 'On the seventh day thou shalt rest, that thine ox and thine ass may rest' (Exod. xxiii. 12).

Cattle, in the large herds in which they were kept by the patriarchs, roamed in a semi-domesticated condition over great areas of land. Thus they often became wild and fierce, the more especially as they were in those times exposed to the attacks of many wild beasts, the lion and the bear, the wolf and the leopard, and thus acquired ferocity in self-defence.

Across the Jordan, the wild bulls of Bashan (Ps. xxii. 12) were compared for their savageness by the

Psalmist to his enemies. Nevertheless, although they were thus allowed to roam wherever they could feed—in the open country, with sufficient tending to guide them, no doubt, from scarcer to more plentiful pasture—a certain selection were fattened for the table and stall-fed by the rich. Fat oxen are distinguished from oxen out of the pastures in 1 Kings iv. 23, where Solomon's provision for the day was ten of the former and twenty of the latter. Again, in Prov. xv. 17, stalled cattle are spoken of; 'Better is a dinner of herbs where love is, than a stalled ox and hatred therewith.' 'Calves of the stall' are spoken of in Amos vi. 4, Mal. iv. 2.

The oxen of the present day in Palestine appear to be a deteriorated breed. They exist in far smaller numbers, and are no longer cared for as they used to be. East of the Jordan they are more abundant. The land in other parts is more barren, and the inhabitants poorer and less careful of their pastoral welfare. Stalled cattle may be said to be unknown, and the insufficient quantity of pasture in the winter is unassisted by a supply of fodder. A few beasts may be seen roaming in search of food in such wildernesses as that from the Dead Sea to Beersheba, and from Beersheba to Gaza, at a season when withered weeds, many yards apart, and perhaps already bared of leaves by snails, are well-nigh their only nourishment. We have a means of judging of the quality of the cattle in Biblical times. The Egyptian monuments give drawings of several breeds of cattle, and the animals represented were evidently large and handsome. These may perhaps be taken as a sample of the ancient oxen of Palestine, when the state of the country permitted their attentive

culture. At present good cattle may be found in Egypt, but in Central Palestine beef is almost unknown, and what is to be had is of the poorest quality. The breed is small and shaggy, not unlike Highland cattle. They are little used for agricultural purposes. At the south end of the Dead Sea, however, the cultivating

WILD OX.

Arabs there use them almost exclusively. Larger and finer cattle are found in Northern Palestine, which seem more nearly akin to those found at present in Egypt and represented on the ancient monuments.

In the Jordan Valley there is an animal of the ox kind, *Bos bubalus*, the Indian buffalo, which is a different species from the common ox (*Bos taurus*). It is also

much used in Egypt, but requires marshy or muddy soil, where it can wallow during the heat of the sun. In some places it is utilized for ploughing in Palestine, where the conditions permit, as in the upper parts of the Jordan. It is probably of more recent introduction from Persia than would allow of its mention in Biblical times. It is a most ungainly beast to look at, and always of a dark colour.

This buffalo is a native of India in its wild state, but has been introduced and made use of in all parts of Asia and Northern Africa where the climate is warm enough. It has been stated that they are in use at the Dead Sea (Ghor es Saffieh), but I cannot with certainty recall having seen them there during a sojourn of a fortnight. The mud which forms the swamps they would otherwise revel in is probably of too salt a nature to suit them.

CHAMELEON (Heb. כֹּחַ *koach*).

This word occurs only in Lev. xi. 30, where amongst unclean things are included 'the ferret and the chameleon and the lizard and the snail and the mole.' These are pronounced to be unclean 'among the creeping things that creep upon the earth.'

There appears to be no reason why the Hebrew word *koach* should be translated 'chameleon.' The root signifies 'strength,' which would hardly be applicable. Bochart refers the term to a powerful species of lizard, the largest of its class, called the queen lizard or the monitor. The Arabic name of this lizard (الورل *alwarl*) implies strength and courage. There are two species of *Monitoridae* to which this term is applied, the *Psammosaurus scincus* and the *Monitor niloticus*, both of which have been found in the regions round the Dead

Sea and south of it. They are the largest of the lizard family, and both of them attain a length of five feet or even more.

The characteristics of the true chameleon amongst medieval writers were well known and are frequently alluded to; viz. that of its power of changing colour, and its being supposed capable of living upon air. The latter has given rise to the supposition that the word תִּנְשֶׁמֶת *tinshemeth*, translated 'mole' in the passage quoted above, should be rendered 'chameleon,' since this Hebrew word is from the root נָשַׁם *neshem*, to breathe, and the etymological interpretation corresponds with the vulgar one, popular since the time of Pliny, who states that this animal 'neither eats nor drinks, but stands with his mouth always open, and the air serves him for nutriment' (*Nat. Hist.* lib. viii. c. 33). Sir John Mandeville (1356) speaks of the 'camles, that is a lytille best as a goot, that is wylde, and he lyvethe by the eyr, and eteth nought ne drynkethe nought at no tyme. And he chaungethe colour often tyme,' &c. (*Travels*, p. 289, ed. Halliwell, 1839). Shakespeare also says 'of the chameleon's dish: I eat the air' (*Hamlet*, iii. 2. 98).

There appears to be no appropriateness in rendering this term 'mole,' which is indeed the translation of another word, with the primary signification of burrowing, occurring in Isa. ii. 20. [See MOLE.]

Chameleons form the sub-order *Vermilingues* of the Saurian or Lizard order of the class Reptiles. There are many species. They are found in Southern Europe, Africa, Asia Minor, Hindostan and Ceylon. Madagascar contains no less than twenty-one species. The common chameleon has a wide range from South Spain through Africa and Asia Minor to India and Ceylon. Its colour

is greener in India than in Africa, where a brown-yellow tint is the prevailing shade. It is very frequent in Palestine, but not easily detected, so motionlessly does it remain on the branch of the tree to which it has assimilated its colour. In habits it is exceedingly sluggish, but on the arrival of an insect, its extraordinary worm-shaped, lobe-ended tongue protrudes itself with unerring aim and to a surprising length. The end of it is fleshy and cup-shaped, and exudes a viscid substance, which renders the captured insect's escape impossible. The animal stands high on its legs; the whole length being about six or seven inches. Its body is flattened and ridged with teeth; its head is conical and angular and very scaly, while its eyes look in opposite directions with a strange glare through a narrow slit in the skin by which they are covered. The eyes roll about slowly in a disconnected way; and these peculiarities render the chameleon a very odd-looking creature. It has the power of suspending itself by its tail at the end of branches of trees, poised in position for catching flies.

The change in colouring is a complicated process, and governed by two kinds of nerves, which are in connection with a number of minute corpuscles of colouring matter at different depths in the animal's skin. Also there is a colouring matter of yellow in the skin and a layer which is either blue or yellow as the light is absorbed or transmitted. Irritation causes the nerves to act (in connection with the brain) upon the colouring matter, apparently, and it seems that different luminous rays of light falling upon the corpuscles are themselves able to act upon them, and cause the nerves to change the depths of their position in the skin, thus producing different effects.

The context in the passage quoted leads us to be pretty certain that some kind of lizard is intended to be mentioned by the word *tinshemeth*; and Bochart has argued at length that it should be, as above stated, the chameleon. Some of the most important old versions of the Bible believe that the 'snail' and 'ferret' of the context should both apply to animals of the lizard kind. [See SNAIL, FERRET. With reference to another translation of the word *tinshemeth*, see SWAN.]

CHAMOIS (Heb. זָמֶר *zemer*).

This term is found in Deut. xiv. 5, where the chamois is included along with 'the hart, and the roebuck, and the fallow deer, and the wild goat, and the pygarg, and the wild ox,' as being clean and animals to be eaten.

The chamois is not a native of Bible lands, nor is there any reason to suppose it ever was. Some other animal must therefore be intended. The camelopard or giraffe is the suggestion of some of the old versions; but this animal is a native of Central Africa. This suggestion appears to have arisen from the Arabic word زمر *zamara*, which has been derived from a root signifying to crop branches, to browse. The Arabic *zamar*, however, implies a leaping animal; and with this slight foundation to go upon modern commentators have proposed the *kebsch* (*Ammotragus Tragelaphus*), a mountain sheep which is said to inhabit Arabia Petræa and to be depicted on Egyptian monuments. It is also stated to occur near Cairo on the Mokattam rocks; but this is more likely to be the *aoudad* of North Africa—if indeed any such animal occurs in the limited and rather frequented space indicated. Mountain sheep are good to eat, and also satisfy the sense of leaping, which limits the

field wherein to seek for the meaning of *zemer*. Other words are applied to the other leaping animals, gazelles, antelopes, and ibex, which are also good to eat. But I am somewhat sceptical about the *kebsch*. Repeated enquiries amongst the Sinai Arabs and those of Petra and Mount Hor and elsewhere in Arabia Petræa failed to elicit a word of information about the *kebsch* or any sort of wild sheep. Unfrequented places were traversed, and all the well-known Palestine wild beasts were met with in some form or other, but I could find no trace of such an animal, nor of any large antelope, in the animal craft of any of the Bedawin. It is possible that the suggested interpretation is correct, and that the supposed animal mentioned has become extinct or very rare in comparison with its former occurrence. The solution is full of uncertainty, but no better has been offered.

### Cock. Hen.

There is no direct mention of domestic poultry in the Old Testament, nor do we know at what period they were first introduced into Palestine. There is no representation of the cock on Egyptian monuments, nor is there any mention of cock or hen in the poems of the earliest Greek period of Homer and Hesiod. The native country of the domestic cock is supposed to be India, and the Bankiva fowl of Java, as well as the larger native breed of Malacca, are believed to be the parent species. There are two or three other well-marked varieties of the wild or jungle fowl in India, all of which will breed with the barn-door poultry. The migration of domestic fowl to Western Asia and Europe was of a later period than would be expected, and probably took

place with the Medo-Persian conquerors. As the Persians spread their dominions the cock, the 'Persian bird,' went with them. The first Greek mention of the cock appears to be in Theognis, in the latter half of the sixth century B.C., and their diffusion further west was probably not slow. Cæsar found fowls among the Britons in the middle of the first century B.C.

In the New Testament there are familiar allusions to the crowing of the cock, showing that the bird was common at the time of the coming of our Lord. One of the most beautiful similes in the Bible is that of Luke xiii. 34, 'O Jerusalem, Jerusalem, which killest the prophets, and stonest them that are sent unto thee; how often would I have gathered thy children together, as a hen doth gather her brood under her wings, and ye would not!' Cock-crowing is mentioned as a known period of the night in Mark xiii. 35, 'at even, or at midnight, or at the cock-crowing, or in the morning.' This cock-crowing is probably what should really be called the second cock-crowing, and represents about an hour before dawn. The first was at midnight, but being less attended to is not spoken of as *the* cock-crowing. Hence in Mark xiv. 30, 'in this night, before the cock crow twice, thou shalt deny Me thrice;' while in Matt. xxvi. 34 a seeming discrepancy, 'this night before the cock crow thou shalt deny Me thrice,' is explained by the less accurate Apostle not mentioning the unnoticed crowing.

The regular crowing habits of Eastern cocks have been noticed by several travellers. Canon Tristram says that during his first week at Beyrout he 'was regularly awakened three times every night by the sudden crowing of the cocks on the roof of the hotel.' The two o'clock, or thereabouts, cock-crow appeared to be very

regular amongst the Ghawarneh villages in the Ghor, where a considerable number of Bantam fowls were kept. Our supply of fresh eggs from these birds was more regular and better than we elsewhere met with. Domestic fowl are usually frequent in Palestine, but it by no means follows that the eggs obtained will be fresh.

In 1 Kings iv. 23 we are told that Solomon's provision for one day included fatted fowl. This is perhaps the only direct mention of domestic poultry. The word used is בַּרְבֻּרִים *barburim*, which, according to some writers, means 'poultry fatted in the pen.' But the term is not elsewhere met with, and commentators disagree as to whether it refers to such domestic poultry as are at present in use, or to some other species kept in confinement as a delicacy. Nehemiah (v. 18) also tells us that fowls were prepared for his daily use; but the Hebrew term is a different one, and bears no specific interpretation.

As an argument in favour of early domestication of fowls, reference has been made to passages wherein eggs are spoken of as articles of food. In Job vi. 6 the word חַלְמוּת *chalamuth* is translated 'the white of an egg;' 'Is there any taste in the white of an egg?' but the term is probably used merely to convey the idea of insipidity.

In Luke xi. 12 we have an undoubted instance of eggs being spoken of as in use for food: 'If he shall ask an egg, will he offer him a scorpion?' At this period it is certain that poultry were widely domesticated in Palestine, and probably eggs then, as now, were an indispensable delicacy where they could be obtained. At entertainments in the East eggs are often served up with fish and honey.

## Cockatrice (Heb. צִפְעוֹנִי *tsiphoni*).

The Hebrew word *tsiphoni* occurs five times in the Bible, and is translated cockatrice each time, though once (Prov. xxiii. 32) this rendering is marginal, that of the text being 'adder' (see ADDER). It is spoken of as 'stinging' (Prov. *ut supra*), as having a den (Isa. xi. 8), as being the offspring of a serpent (Isa. xiv. 29), the eggs thereof are deadly poison and produce vipers (Isa. lix. 5) (see, however, SERPENT), and they were incapable of being charmed, and of the most deadly nature. The Hebrew word signifies 'to hiss' in its root, but this being a character of all serpents is of no value as a means of identification.

The original Hebrew word has received a variety of renderings, as *aspic*, *regulus*, *hydra*, *viper*, and *cerastes*; and later the *Algerine adder* and the *great yellow viper*. These interpretations appear to be all little other than mere conjecture, except the earlier ones, which were founded on ignorance of the natures of living things. All we can safely predicate of the *tsiphoni* is that it was some very poisonous species of snake, distinct probably from those intended by the words rendered ADDER and ASP, which see.

Amongst early English writers the Cockatrice was merely fabulous, a basilisk with a dragon's tail armed with a sting. The basilisk had the head and body of a cock with the tail of a serpent, and his description may be found in early works on heraldry. Like the basilisk, the cockatrice had the power of destroying by its glance. 'This will so fright them both that they will kill one another by the look, like cockatrices' (Shakes. *Twelfth Night*, iii. 4. 214). These characteristics

caused the name to be synonymous with many others which represented an evil woman, and the animal itself to be regarded as an emblem of sin.

### Coney (Heb. שָׁפָן *shaphan*).

The Coney was forbidden as food to the Israelites, 'because he cheweth the cud but divideth not the hoof; he is unclean' (Lev. ii. 5, Deut. xiv. 7). Two other

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references occur to the coney: 'the rocks are a refuge for the conies' (Ps. civ. 18), and 'they are exceeding wise . . . the conies are but a feeble folk, yet they make their houses in the rocks' (Prov. xxx. 24, 26).

The word coney (Lat. *cuniculus*, a rabbit), a common

name formerly for the rabbit, was an erroneous translation, since no rabbit occurs in Palestine or Sinai. Two or three kinds of hare may be met with, but no true rabbit. The Hebrew word signifies 'the hider.'

The animal intended is no doubt the *Hyrax Syriacus*, which is said to be known in South Arabia by the name *thofun*, of a similar signification with *shaphan*. A good figure may be seen as the frontispiece of Tristram's *Fauna and Flora of Palestine*. The Hyrax is a very peculiar little animal, and with one or two closely allied species forms the only genus in the order *Hyracoidea*, which stands between the elephant and the horse group, according to modern classification.

The Syrian Hyrax is not uncommon, especially in Sinai, and a colony exists at the summit of Jebel Musa. There and elsewhere I obtained momentary glimpses of the animal before it disappeared amongst the stones. Its habits are identical with those of the Bible coney, so far as mentioned. It has been called the rock-badger, and the same species is stated to be found in Lebanon, throughout Arabia Petræa, and by the coasts of the Red Sea to Arabia and Ethiopia. It is about the size of a rabbit, of a reddish colour, very crafty, and living in small colonies. It has a habit of sitting on a ledge of a rock and working its jaws in mastication, as if it really did chew the cud, so that a careless observer would readily mistake it for a ruminating animal. It delights in the tops of aromatic shrubs for food, and it finds plants of this description most abundant in the hot dry wastes of Sinai. It is generally to be found, like the rabbit, feeding in the early morning or at sunset, and a sentry is said to be posted to give warning by a short squeaking bark, though this latter statement

has been questioned. Generally speaking they scuttle away before one can obtain a glimpse of them.

The position of this animal in zoological classification is much disputed. That given above is Professor Huxley's, but it is hardly decided upon amongst naturalists. Its teeth and feet closely resemble in structure those of the hippopotamus.

Four species of Hyrax are known. The range of the Bible Hyrax is given above. Another, the Cape Hyrax, is found at the Cape and East Coast of Africa, south from Abyssinia. Two other species are described from West Africa.

### Coral (Heb. רָאמוֹת *ramoth*).

Coral is the somewhat doubtful rendering of the Hebrew word *ramoth* in Job xxviii. 18, Ezek. xxvii. 16. The word is derived from a root signifying 'to raise up,' sometimes 'to have lofty branches' (Isa. ii. 3, x. 33). Hence the term is not altogether unsuitable, since coral branches and lifts itself up in the water.

The value of coral is thus alluded to in Job, 'No mention shall be made of *coral* or of pearls; for the price of wisdom is above rubies:' and in Ezekiel, 'Syria was thy merchant: they occupied in thy fairs with emeralds, . . . and coral, and agate.'

Pliny tells us that coral was highly valued amongst the ancients, both because it protected the wearer from danger, and on account of its beauty (lib. xxxii. c. 2). Its substance was a sore puzzle to early naturalists.

The growth of coral is now well understood, and there are few more beautiful theories of explanation in the life-history of animals than that well-known one of

Darwin, which is apparently incontrovertible, with regard to the manner of growth of coral reefs.

Coral is the name commonly given to the stony skeletons of polypes of numerous species, giving different forms and shapes to the mass. Red coral is found in the Mediterranean and in the Pacific about Cape Negro. It is dragged off from the roots by those engaged in the trade by a strong heavily weighted net being hauled over the bottom where there is supposed to be coral, six or seven boats being engaged in each haul. The little polypes or zoophytes which form this substance are of the same nature as the sea anemones which adorn our rocks at low tide.

Corals belong to the *Anthozoa*, the second class of the group *Zoophyta*. The white stony coral and sea anemones form the *Zoantharia* in this class, and the red coral and tube coral and others form a second order, the *Alcyonaria*.

CORMORANT (Heb. שָׁלָךְ *shalak*).

The Cormorant, as the translation of the above term, is mentioned in two places in the Old Testament. It is included amongst the unclean birds in Lev. xi. 17 and Deut. xiv. 17, 'Ye shall have in abomination the little owl and the *cormorant* and the great owl.' In two other places (Isa. xxxiv. 11, Zeph. ii. 14) in our version the word 'cormorant' occurs as the translation of the Hebrew word קָאַת *kaath*, which undoubtedly means the 'pelican,' and which is elsewhere so translated. [See PELICAN.] The term *shalak* implies a *plunging* bird. The cormorant does not plunge into the water from above, as the gannet does so splendidly; but the gannet

does not occur, or only in the greatest rarity, along the east coast of the Mediterranean.

Some of the tern family plunge in true gannet fashion. The little tern especially I have often watched immersing himself from a height of 20 to 30 feet like an arrow into the water. Southwards from Gaza I observed these birds for some time performing this graceful evolution. Several other kinds of tern are frequent along the east of the Mediterranean and up the Nile waters and lagoons.

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With terns, gulls would easily be included, and though there are numerous gulls on the coast of Palestine and on the Sea of Galilee, and some species that roam far and wide, as they do in this country, after the plough or in search of terrestrial mollusca, yet gulls are nowhere mentioned in the Bible translation.

Gulls and terns would both naturally be pronounced unclean on account of their living upon fish.

CRANE (Heb. סוּס *sus*).

In Isa. xxxviii. 14 occurs the passage, 'Like a crane or a swallow, so did I chatter;' and in Jer. viii. 7, the same birds are mentioned, 'the turtle and the crane and the swallow observe the time of their coming.' The word 'crane' is in both passages the translation of *sus*, and 'swallow' of עָגוּר *agur*. According to most of the ancient versions *sus* is rendered 'swallow,' and it appears probable that the two words have been transposed, *agur* therefore meaning 'crane.' But the transposition has not altered the meaning. In confirmation of the above, Canon Tristram finds that *sis* is the Arabian for swift, a bird closely resembling the swallow. [See SWALLOW.]

The migration of the crane (*Grus communis*) is alluded to by the prophet Jeremiah. It spends its winters in Northern Africa and eastwards in warm temperate climates to China. In Southern Palestine it is a winter resident, remaining on into the spring, but it is not known to nest there. It passes north, to breed at the beginning of April, and returns in September. A large flock assembled in the evening at Tel el Milh, near Beersheba, to roost, and their loud, clanging, trumpet-like note was heard during several nights while camping in that country in January. They were exceedingly wary, and would permit of no approach. The melodious, mysterious note of the crane is very unaptly rendered 'chatter,' or assimilated with that of the swallow. The cranes (*Gruidae*) and the bustards (*Otidae*) are classed together in the order *Alectorides*. Formerly the cranes were classed with herons, but it is now admitted there is no real affinity to the *Ardeidae*

or herons. In several parts of the British Islands (especially Ireland) the name 'crane' is erroneously applied to the heron. The crane was formerly a frequent winter visitor to England, and used to remain to breed in the fens. It is now of exceedingly scarce occurrence, and

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only visits us occasionally when the winter is of more than ordinary severity on the Continent, and the birds are driven to the milder western climate of our islands. Rare stragglers also occur on the spring and autumn migrations.

The crane is the largest bird now to be met with in Palestine. Its whole length is fully four feet. It possesses a peculiarly convoluted trachea or windpipe, and corresponding modifications of the breastbone and merry-thought, which are different from those of any other bird, and most interesting to anatomists.

Cranes were in former times flown at, as the proper quarry of gyr-falcons in this country. They were an indispensable appendage at civic banquets, Lord Mayors' feasts, and other public entertainments, and a fine of 20 pence an egg was imposed as a penalty for robbing their nests as late as the middle of the sixteenth century.

### Cuckoo (Heb. שַׁחַף *shachaph*).

'Cuckoo' is the translation of the word *shachaph* amongst the birds forbidden for food in Lev. xi. 16, Deut. xiv. 15. In the Jewish Bible also the word is rendered 'cuckoo,' but doubtfully. The Arabic name for the cuckoo is almost the same as our own, وقوق *wakuk*. We have, however, no clue as to the bird signified, the derivation of the word being from a root signifying 'slender,' 'lean.'

The parasitic habits of the cuckoo are well known. These are perhaps the more remarkable, when we observe how utterly different are the eggs of our common cuckoo from those of its host. Two eggs could hardly be more unlike than that of the hedge sparrow and the cuckoo, yet the hedge sparrow is one of the young cuckoo's favourite foster-nurses. Shakespeare has

> 'The hedge sparrow fed the cuckoo so long
> That it had its head bit off by its young.'

In most cases when the course of Nature's laws are

interrupted by some unexpected exception, the discrepancies are externally smoothed away.

Our own cuckoo (*Cuculus canorus*) is a common summer visitant also in Palestine. It has a very wide range, through all Europe and Asia to the Arctic Circle in summer, and as far as South Africa, India, and the Moluccas in winter.

Another species, the Great-spotted Cuckoo, which has been taken a couple of times in England, is also a common summer visitor to Palestine. It is a large bird, and makes use of the nests of the hooded crow, and probably the Syrian jay, to deposit its eggs in. The habit of parasitism is the same as that of our own species. It returns to Palestine at the beginning of March, about a month earlier than the common cuckoo. Its range is not so wide eastwards as the latter species.

DEER. See FALLOW DEER.

DOG (Heb. כֶּלֶב *keleb*; Arab. كلب *kelb*).

The Dog is commonly mentioned in the Bible. Amongst the Jews dogs were declared unclean, and regarded with contempt. 'Am I a dog, that thou comest to me with staves?' (1 Sam. xvii. 43); 'Is thy servant a dog, that he should do this thing?' (2 Kings viii. 13); 'A living dog is better than a dead lion' (Eccles. ix. 4). Nowhere in Scripture is the dog mentioned with anything except disparagement or contempt. Nevertheless, dogs were domesticated and tolerated around houses, but only inasmuch as they were considered useful as scavengers. They were not made companions of, and probably the very purpose to which

they were devoted—that of devouring offal—would render them impossible as pets. At this day, every town, from the greatest to the least, in Palestine swarms with lazy filthy curs, which usually hardly move out of one's way in the daytime, but howl hideously throughout the night. Often, especially in South Palestine, these animals bear a close resemblance to the jackal, and it is a well-known fact that the two races (*Canis familiaris*, *Canis aureus*) often inter-breed. Pennant considers that the jackal is the original stock of the old-world dogs.

Amongst the Jews, and indeed amongst all Orientals, the terms 'dog' or 'son of a dog,' or 'dead dog,' were terms of abuse and reproach, or of self-abasement when spoken of oneself. Nowhere are his moral or intellectual qualities held up in praise. Even though made of use as a protection for flocks in keeping off wild beasts, yet the duty is cited as one of degradation, 'whose fathers I would have disdained to have set with the dogs of my flock' (Job xxx. 1).

No doubt the life the dog leads in the East tended always to make him mean-spirited and greedy. The Biblical character of the dog appears to have pervaded English writers subsequently to the Reformation. Shakespeare has hardly a good word for the dog (and he has many a bad one), and the same may be said of most of his contemporaries, although dogs in this country were trained to many purposes in the chase.

The dog of Palestine villages is not unlike an ill-bred colley or shepherd's dog of this country. In India the same race is called the Pariah dog.

The Persian greyhound is occasionally to be seen in the possession of Arab sheikhs, who keep it for

hunting the gazelle. It is of a similar breed to our greyhound, but stronger built and more shaggy.

In the New Testament our Saviour denotes men of odious reputation and cruel, evil temper by the term 'dog.' He designates those abandoned to foul ways of living and wallowing in moral filth by the word 'swine.'

Houghton gives us a most valuable account of the sorts of dog known to the ancient Assyrians. Amongst that warlike people dogs appear to have reached a high degree of excellence in several distinct breeds.

It is only in temperate climates that dogs preserve their good qualities; their ardour and sagacity decay in hotter regions, and indeed it is only in Europe that the high character of the dog obtains, or is worthy of universal belief. The ancient Egyptians, however, regarded the dog as sacred. Anubis was worshipped in the form of a dog.

### Dove (Heb. יוֹנָה *yonah*).

The Dove, or Pigeon, for the same Hebrew word receives either translation, is very frequently mentioned in the Bible. Properly speaking, the 'dove' refers to the domesticated variety, while the wild species are included under the name 'pigeon,' but the words are used interchangeably.

The dove is first mentioned in Gen. viii. 8–12, when Noah sent out the dove three times from the ark. On its second flight it returned with an olive-leaf, and hence since that time the olive has been regarded as the emblem of peace and prosperity. The next time we read of it is when the Lord vouchsafed a sign to Abram that

his seed should inherit Canaan, and demanded a sacrifice which included 'a turtle-dove and a young pigeon.' The dove was declared a pure bird by the law of Moses. Subsequently the dove or pigeon, sometimes the turtle-dove specifically, is commonly ordained as a sacrifice upon various occasions. No other bird was permissible as an offering (Lev. i. 14), consequently no other bird

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is so commonly mentioned in the Bible, whether Old or New Testament. In Lev. xii the offering for a woman for her purification was 'a lamb of the first year for a burnt-offering, and a young pigeon or a turtle-dove for a sin-offering . . . . and if she shall not be able [marg. her hand find not sufficiency of] to bring

a lamb, then she shall bring two turtles, or two young pigeons. The one for a burnt-offering, and the other for a sin-offering.' Thus it is that the Virgin Mary, being poor, offered according to this law 'a pair of turtle-doves or two young pigeons' (Luke ii. 24). For the cleansing of the leper, if he be poor, it was enjoined that he offer 'two turtle-doves or two young pigeons, such as he was able to get . . . . for a burnt-offering' (Lev. xiv. 22). The same offering is required of the Nazarite for his purification (Numb. vi. 10).

It will be hence apparent that there was a considerable demand for doves, and as it was difficult for those who had long journeys to come to carry the birds with them, the priests permitted the sale of doves in the courts of the temple itself, an evasion of the spirit of the sacrifice, and a desecration of that holy place which our Saviour would not tolerate, and He therefore twice expelled these traders with scourges.

The dove was held as the symbol of pureness and innocence. In Matt. iii. 16 we read that when Jesus was baptized, He saw the Spirit of God descending like a dove and lighting upon Him, no other living thing being so fit an emblem of Christ's lovingkindness. The same Apostle tells us that Christ charged His disciples, 'Be ye therefore wise as serpents, and harmless as doves' (x. 16). This gentleness of disposition renders the dove a defenceless creature, unable to take care of itself, and easily becoming a victim to persecution. Hence we find the Church or spouse in the Canticles compared to a dove (ii. 14), and Hosea likens the Israelites to a 'silly dove without heart' (vii. 11), which shall 'tremble as a dove out of the land of Assyria' (xi. 11).

Other characteristics of the dove are alluded to or dwelt upon in the Bible. In Ps. lv. 6 its swiftness of flight is recalled: 'Oh that I had the wings of a dove;' and in Ps. lxviii. 13, the beauty of its feathers is spoken of; 'the wings of a dove covered with silver, and her feathers with yellow gold.' Again in Canticles its amativeness is referred to (i. 15, v. 2). In Jer. xlviii. 28 the habits of the dove in its nidification are alluded to, 'like the dove that maketh her nest in the sides of the hole's mouth.' The mournful, plaintive cry of the pigeon is often spoken of, 'like doves of the valleys, all of them mourning' (Ezek. vii. 16); 'I did mourn as a dove' (Isa. xxxviii. 14); 'and mourn sore like doves' (Isa. lix. 11).

Wild pigeons are very numerous in Palestine. The wadies or dry valleys with rocky precipitous sides, which abound around the Jordan Valley and the Dead Sea, are especially favourable for their shelter and habits. Enormous numbers of rock pigeons breed here in perfect security, and the order *Columbidae* is well represented, there being 4 species of pigeon and 3 of turtle-dove. In winter the wooded places round the south end of the Dead Sea are thronged with two species of turtle-dove, the palm turtle and the collared turtle (*Turtur Senegalensis* and *T. risorius*). Other species, as our wood pigeon and rock pigeon (*Columba palumbus* and *C. livia*), are extremely abundant in the summer. The wood pigeon especially is taken in large numbers by the villagers in Palestine during its spring and autumn migrations, when it occurs in myriads.

The turtle-dove (Heb. תּוֹר *tor*) has been already mentioned several times. Its regular migration is spoken of in Jer. viii. 7, 'The turtle and the crane and the swallow observe the time of their coming.' And in Cant. ii. 11, 12,

'For, lo, the winter is past, the rain is over and gone; the flowers appear on the earth; the time of the singing of birds is come, and the voice of the turtle is heard in our land.' The species referred to here is the common turtle-dove (*Turtur communis*). The other two Palestine turtle-doves are residents in the valley of the Jordan, but the common turtle leaves in winter and returns in amazing numbers early in April. Like the pigeon, the turtle-dove was a symbol of purity, from its habit of pairing for life, and was ordained as an appropriate sacrifice. The turtle here spoken of as a migrant is the same that visits this country also in the summer. Probably the palm turtle and the collared turtle helped to supply the birds requisite for sacrificial purposes. It may be presumed that 'young pigeons' were permitted, because it was possible to catch them from their nests amongst the rocks at almost any time of the year.

Pigeons are kept in a domesticated state in great quantities in Palestine and many other Eastern countries. The dung is valued highly as a manure in Persia, and the dovecotes are erected at a distance from the houses. In Egypt dovecotes are common. All over Syria the richer sort own dovecotes, which stand apart and consist of mud and bricks with earthen pots inserted, each of which forms the home of a pair of pigeons. The poorer people rear them in their houses and have holes in the walls for them. 'Who are these that fly as a cloud, and as the doves to their windows?' in Isa. lx. 8, appears to refer to this practice of keeping domesticated pigeons.

The dove was held sacred in Syria in the earliest times. It reached Syria from Babylon. It was the bird of Astarte of Ascalon, the goddess of Nature. Semiramis, whose favourite town, after Babylon, was Ascalon, her

birthplace, was brought up by doves and named from the bird. Subsequently, among the Greeks, it was one of the birds of Venus, but not of so early a period as her sparrows. The temple of the Paphian goddess in Cyprus abounded with them. Xenophon found the Syrians worshipping fishes and pigeons. Although the dove is mentioned by Homer, it is not as a domesticated species, but as the emblem of swiftness and of timidity. The woods and rocky places of Greece abounded with these birds, as did Palestine. But it is not till the end of the fifth century B.C. that these birds are spoken of by the Greeks as domesticated, and it was probably from Syria that the domestic pigeon reached the Greeks. It is first mentioned in Sophocles, early in the fifth century B.C. There is no very ancient mention of the pigeon as a domesticated bird in the Bible, the first being that of Isaiah, given above, about seven centuries B.C. From Greece they spread to Italy, and thence all over Europe.

It is, however, probable that the Israelites kept pigeons in a semi-domesticated state from the earliest times, since *wild* animals were never sacrificed, although there is no unmistakable mention of their doing so.

DRAGON (Heb. תַּן *tan*, תַּנִּין *tannin*).

The two words which are translated 'dragon,' though similar, have probably different meanings. The word *tan* is used in the plural always. It refers to some creature inhabiting the deserts. 'I am a brother to dragons, and a companion to ostriches' (Job xxx. 29). 'The wild beasts of the islands shall cry in their desolate houses, and dragons in their pleasant places' (Isa. xiii. 22). 'Desolate and a den of dragons' (Jer. x. 22). 'Dragons

of the wilderness' (Mal. i. 3). 'I will make a wailing like the dragons, and mourning as the owls' [ostriches] (Mic. i. 8). 'They snuffed up the wind like dragons' (Jer. xiv. 6). And Jerusalem and the cities of Judah are foretold that they will be made a 'den of dragons' (Jer. ix. 11, x. 22).

The above uses of the word render it probable that the jackal is the animal meant by the word *tan*. But we thus unfortunately get the word 'jackal' repeated in Isa. xiii. 22, where *îyyîm* ought most probably so to be rendered (see BEHEMOTH). To avoid this repetition, the Revisers translate *îyyîm* here 'wolves,' though elsewhere 'jackals.' It is likely enough that the two words *îyyîm* and *tan* were really synonyms, so common and familiar an animal as the jackal in the East having no doubt a variety of names. And as we have no synonyms to render the passage accurately, the Revisers' method is the less open to objection. The wailing, mournful howl and the frequenting of ruins in desert places can only belong to the jackal. The Syriac version renders *tan* by a word which Bishop Pococke states means a 'jackal.' He also refers to an Arabic version in favour of this opinion.

The word *tannin* is used apparently of a great monster, sometimes of the land, sometimes aquatic. It appears to be equivalent to 'leviathan' or 'crocodile' in several passages, and in others stands for monstrous serpents of any sort. In Gen. i. 21, the word is translated whales in the A. V. and altered to sea-monsters in the R. V. In Ex. vii. 9 Aaron's rod is turned into a serpent (*tannin*). In Deut. xxx. 33, 'their wine is the poison of dragons,' shows that the serpent was a deadly one; while in Ps. xci. 13, 'Thou shalt tread upon the lion and adder; the young lion and the dragon shalt thou trample

under feet,' the Hebrew word appears from the context to refer to a deadly land serpent. The word is altered to serpent in the R. V.

In Ezek. xxix. 3, 'Behold, I am against thee, Pharaoh king of Egypt, the great dragon that lieth in the midst of his rivers, which hath said, My river is mine own, and I have made it for myself. And I will put hooks in thy jaws, and I will cause the fish of thy rivers to stick unto thy scales,' the word must signify the 'crocodile.' No other animal could be spoken of as typical of the Nile and as clad with scales. In Isa. li. 9 and Jer. li. 34 the word 'dragon' is also used to translate *tannin*, where crocodile is probably the creature intended. In the first of these passages, 'Art thou not it that hath cut Rahab and wounded the dragon?' the term stands as a metaphor for the power of Egypt, and in the second, 'He hath swallowed me up like a dragon,' spoken of Nebuchadnezzar, has led to the supposition that the crocodile formerly inhabited the Euphrates or Tigris. [See LEVIATHAN.]

In the New Testament, the word dragon is found only in the Revelation and applied metaphorically to Satan. It is used symbolically as an emblem of malignity, and without any zoological meaning or reference to any existing creature.

The frequent and varied use of the word dragon in the Bible has no doubt tended to perpetuate the lingering belief of the ignorant in the existence of some such animal. Zoologically the term is now limited to a harmless genus of small lizards, provided with fan-like expansions, which enable them to hover in the air after a spring. The serpent which compassed the fall of man ; the Python, or serpent-worship of craft and violence, slain by Apollo, or

Wisdom, amongst the Greeks; St. George destroying the Principle of Evil; the dragon-worship of China, Egypt, and elsewhere in the East, all combined to root firmly amongst mankind the belief in a terrible reptile or reptiles which were at war with mankind. Knights of chivalry went forth to war against it in medieval times. Travellers filled pages with fanciful and absurd delineations. Naturalists (Gesner and Aldrovandus) gave representations of a dragon with seven heads, bird-like feet, gaping mouths and long bodies. Sometimes, as in India, these myths trod on the heels of facts; for dragons' teeth, which have there been sold as medicine, were actually teeth of gigantic saurian fossils. Some maintain that these were the real source of the dragon-legend handed down to us from primeval and contemporaneous man. The dragon of chivalry had the feet of a lion, the tail of a serpent, and an enormous throat belching forth flames. Artificial dragons, compounded of parts of various animals pieced together and distorted, were exhibited at puppet shows and fairs not many generations ago. The heraldic dragon has usually the head of a wolf, the body of a serpent, four eagles' feet, wings like a bat, a forked tongue, and a bifid tail.

EAGLE (Heb. נֶשֶׁר *nesher*; Arab. نسر *nisr*).

The term *nesher* is invariably translated 'eagle' in the Bible. In some of the passages where it occurs it is obvious that the 'eagle' of the Bible translators may be more specifically rendered 'vulture,' or 'griffon vulture.' In Mic. i. 16, 'Make thee bald and poll thee for the children of thy delight; enlarge thy baldness

as the eagle,' can only refer to the vulture, which is devoid of true feathers on the head and neck. Again, in Jer. xlix. 16, and in Job xxxix. 27–30, the eagle is referred to as holding the highest elevations of cliffs for its nesting-place, and this is especially a characteristic of the griffon vulture. The prophet Jeremiah refers in particular to the mountain gorges of Edom, and we met with several pairs of these magnificent birds on the crests of the wadies leading from Petra to the Wady Arabah and along the Arabah itself. Here too other large rapacious birds, as the golden eagle and the lammergeier vulture, were observed, and to all of these the Arabs of the present day apply the term *nisr*. It is most likely the Hebrew term *nesher* was equally widely used in many cases.

The powers of sight of the vultures of the larger sort are well known, and did not escape the notice of the Hebrew writers. Thus in Job xxxix. 29, a passage already referred to, we read, 'her eyes behold it [the prey] afar off.' This is one of the almost incomprehensible powers of the vulture, which has long been a puzzle to naturalists, and till recently it was customary to attribute it either chiefly or altogether to the presence of great keenness in the sense of smell rather than of sight. But repeated experiments and observations render it most probable that their method is due to sight alone. A number of vultures may be imagined to be scattered at suitable distances apart in the desert, high up in the air, and each wheeling around and quartering and scanning the area that falls within its ken. Each vulture is also probably carefully kept in view by its neighbours, and as soon as one discovers a prey, and swiftly stoops, to be beforehand with it, the others,

viewing its example, rush to partake of the repast. Their movements are observed and followed by others, and hence it follows that a single carcase, almost marvellously as it appears, becomes the carnival of a multitude of birds of prey; 'wheresoever the carcase is there will the eagles be gathered together' (Matt. xxiv. 28).

The strength of the eagle and its swiftness are noticed. 'He shall come as an eagle against the house of the Lord' (Hos. viii. 1); 'swifter than the eagles of the heaven' (Lament. of Jer. iv. 19); 'as swift as the eagle flieth' (Deut. xxviii. 49); and in the parable of the two eagles and the vine, in Ezek. xvii. the 'great eagle with great wings' is symbolical of power.

In Ps. ciii. 5 there is a reference to an ancient belief that the eagle could renew its youth; 'thy youth is renewed like the eagle's.' The medieval superstition was that every ten years the eagle soared into the 'fiery region' of astrologers, and then plunging into the sea, acquired new life and plumage. The poet Spenser refers to this belief:

> 'An eagle, fresh out of the ocean wave,
> Where he hath left his plumes all hoary gray
> And deckt himself with fethers youthful gay,
> Like eyas-hauke up mounts unto the skies,
> His newly-budded pineons to assay,
> And marveiles at himselfe, stil as he flies.'
>
> *Faerie Queene*, I. xi. 35.

In Deut. xxxii. 11, 12 we read, 'As an eagle stirreth up her nest, fluttereth over her young, spreadeth abroad her wings, taketh them, beareth them on her wings: so the Lord alone did lead him.' It was a prevalent notion that eagles not only trained their young in the art of flight, but those of them that could not gaze upon

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the sun were forthwith destroyed. Thus the dramatist Glapthorne (1635) writes:

> 'She has an eye
> Piercing as is the eaglets when her damme
> Training her out into the serene air,
> Teaches her face the sunbeames.'—*Lady Mother.*

And in an earlier play (1592) this superstition is thus stated:

> 'As air bred eagles if they once perceive
> That any of their brood but close their sight
> When they should gaze against the glorious sun,
> They straightway seize upon him with their talents,
> That on the earth it may untimely die,
> For looking but askew at Heaven's eye.'
> *Soliman and Perseda.*

The parental care alluded to in the scriptural passage is very characteristic of the class of birds to which the eagle belongs, but the development of their wise course of instruction into such an arbitrary 'survival of the fittest' has not, I think, been verified.

From its near approach to the heavens resembling St. John's keen insight into divine truths, the eagle has been assigned to him as an emblem. It is a popular belief that vultures only will feed upon carrion, and that eagles require freshly killed food; and it would be more in accordance with this idea if the term 'eagles' was rendered 'vultures,' as no doubt in some cases it should be. In the East, however, true eagles as well as vultures will not scruple to feed upon carcases, and in fact will never attack living prey except when driven to it by necessity.

The astonishing number of birds of prey of all sizes to be seen in Palestine and the desert region south of it is constantly referred to. At no time in Sinai is it possible to scan the heavens without observing

various species soaring in search of prey. But the larger and handsomer sorts, as the lammergeier (*Gypoëtus barbatus*), the griffon vulture (*Gyps fulvus*), the golden eagle (*Aquila chysoëtus*), the imperial eagle (*Aquila heliaca*), are to be seen chiefly in the rocky valleys and mountainous escarpments, and on the summits of ranges rarely visited. The griffon, however, is more plentiful than the others just mentioned; and it is a constant source of enjoyment to watch these birds sweeping majestically around, and rarely descending from a height so vast that it is often mere guesswork to determine the species unless the flight be very accurately and familiarly known.

The lammergeier, or bearded vulture, of which a few pairs exist between Petra and the Dead Sea, feeds chiefly on carrion. It is, however, stated to be very fond of marrow-bones (left by other vultures), tortoises, and snakes; and its method of feeding on these savoury morsels is to soar to a great height, and then drop the object on the rock till it is sufficiently bruised. From this habit the Hebrew name *peres* is derived, but the bird may also be denoted by the more general term *nisr*. *Peres* signifies the *breaker*, and the Latin term *ossifrage*, employed in Lev. xi. 13, Deut. xiv. 12, which signifies *bone-breaker*, is a good rendering of the word. Spanish hunters name it the '*quebranta huesos*,' or the 'bone-smasher.' The poet Æschylus met his death by one of these birds mistaking his head for a rock, and dropping a tortoise on it from a great elevation. The lammergeier is found from the Pyrenees and Alps eastwards to Tartary and the Altai Mountains, and also in the Atlas Mountains of North Africa. It is, however, becoming scarce in many places. A slightly different species is found

in East and South Africa. In the Himalayas the European species is tolerably plentiful.

The lammergeier (or 'ossifrage') is about three and a half feet in length, and its expanse of wing reaches a width of over nine feet. Its feet are, however, not very powerful, and it does not appear to be capable of carrying off larger prey than hares or foxes. Sheep or goats it destroys, when it finds them grazing near a precipice, by diving and striking at them, until it frequently succeeds in pushing them over the edge, and then devouring the mangled creatures. Always the eyes of the victim are first attacked. In spite of the apparent improbability, from the fact of the feet being not very powerful, there is nevertheless a well-attested circumstantial tale in the Bernese Oberland of a child three years old being carried off in 1760 a distance of 1400 yards by one of these birds, when it was frightened and left its booty. The child was unharmed, and grew up under the name of Lammergeier Anni.

This bird does not soar forth into the open expanse of the sky as freely as the griffon, which almost always keeps itself in view. The bearded vulture prefers sailing along, outlining as it were the brows and crests of ridges and precipices, and is thus much less easily observed with the telescope than the griffon.

The griffon breeds in colonies of eyries, and several of these are enumerated by Canon Tristram; at Wady Kelt, near Jericho; Mount Nebo; in the gorges of the Jabbok and of the Litany river; and at Mount Carmel and in valleys leading into the Plain of Gennesaret. From the vast numbers assembled where it is impossible that food can be plentiful there is no doubt that these birds, like most other

carrion-feeders, can live a long time with little or no sustenance. An enormous capacity for food, and a power of subsisting for long periods unfed, are necessary adaptations to their environment, where the supply is so uncertain and, when it does arrive, so speedily consumed by other feeders or lost by atmospheric waste, unless at once made use of.

The griffon inhabits the warmer parts of the Old World eastwards to the Himalaya and in Africa. It measures about eight and a half feet in expanse of wing and four feet in length.

Both these species exceed in size the largest of the true eagles, the golden or imperial, which are found in Palestine. Of these the latter is the commoner, and remains to breed. The golden eagle, on the contrary, disappears in the summer. The imperial eagle prefers trees to breed in.

Other eagles found in Palestine are the greater spotted eagle (*Aquila clangae*), the tawny eagle (*A. rapax*), Bonelli's eagle (*A. Bonelli*), and the short-toed eagle (*Circoëtus gallicus*). One or two other species probably occur occasionally. The short-toed eagle is the commonest species, and the great abundance of lizards and serpents accounts for this, since it feeds entirely on reptiles. It is a large and dignified species, a little smaller than the golden eagle, migrating to other countries when the snakes hibernate. Its claws are provided with a peculiar arrangement of scales, which protect it against its serpent prey.

Eggs. See Cock.

## Elephant.

The Elephant is nowhere mentioned in the Bible,

except perhaps indirectly in one of the names for ivory, which is often spoken of, and was much in use amongst the wealthy. The usual word for ivory is שֵׁן *shen*, i. e. 'tooth,' but in the mention of the precious things obtained by Solomon from Ophir, שֶׁנְהַבִּים *shen-habim* is the word for ivory. This word *habim* is stated to be, like the names for the ape and peacock, of Tamil origin, and to signify 'elephant' in the dialect spoken on the coast of Malabar and in Ceylon at the present time. The Sanskrit word for elephant is *ibhas*, and this is believed to be identical with the old Tamil *habba*. [See APE, PEACOCK.] *Habba* is also applied to the elephant in Assyrian inscriptions. The early conquests of the Assyrians in India had enabled them to carry on a great trade in ivory, and from them the Tyrians drew their ivory for the great ivory throne of Solomon. 'The men of Dedan were thy merchants . . they brought thee for a present horns of ivory and ebony' (Ezek. xxviii. 15, Isa. xxi. 13). The 'men of Dedan' were a tribe of merchant traffickers from the Mesopotamian desert. Nevertheless, Solomon himself obtained some of his ivory direct by sea. The Egyptians also made use of ivory at a very early period, but according to Diodorus Siculus they obtained it from the Ethiopians.

In 1 Kings xxii. 39 we read of the 'ivory house of Ahab.' Probably the walls were panelled with ivory, like the palace of Menelaus described by Homer (*Odyss.* iv. 73). Ivory was used for inlaying and veneering beds (Amos vi. 4) and other pieces of ornamental furniture, as in the boats of the Phenicians (Ezek. xxvii. 6).

The first mention of ivory amongst the Jews is in David's time: 'All thy garments smell of myrrh, and aloes, and cassia, out of the ivory palaces, whereby they

have made thee glad' (Ps. xlv. 8). 'Palaces' here means some sort of boxes, or chests, or 'arks,' inlaid and veneered with ivory, in which amongst the rich, robes were stored with perfumes.

Ivory is only once mentioned in the New Testament, in Rev. xviii. 12.

### Fallow Deer (Heb. יַחְמוּר *yachmur*).

The *yachmur* is included amongst the animals permitted for food in Deut. xiv. 5. It is also mentioned as being part of the daily supply for King Solomon's table (1 Kings iv. 23). From its being mentioned by Moses, and therefore probably an inhabitant of the Sinaitic region, it seems probable that it was not the fallow deer known to us by that name, since the dry desert regions there would be quite unsuitable for a species loving well-wooded and watered districts. The fallow deer is probably to be identified with the hart and hind of Scripture. [See HART.]

The *yachmur* is rendered bubalus by the Septuagint and Vulgate, and the bubalus (*Antelope bubalis*) was formerly no doubt a common species in desert portions of Palestine. It is still to be found in Barbary and North Africa, and is known to the Arabs under the name of *Bekkr el wash*, or 'wild ox.' The Arabian writers were familiar with it, and Bochart has gone far towards establishing that this wild ox was the real yachmur. It was a common animal of chase by the ancient Egyptians, and its venison was apparently much prized. As we have seen, it was brought to the king's table.

Although an antelope in structure, the bubale much more resembles a cow, and its name amongst the Arabs shows that they so consider it. It has a heavy build

and short horns, and appeared intermediate between a calf and a stag to the ancients. The bubale ranges from Arabia to the Atlas Mountains. Like the ibex, it lives in small herds.

No doubt it was much commoner formerly than it is at present, and may have extended to Palestine. I could hear of no such animal amongst the Sinaitic Bedouins, however, although Canon Tristram heard of its coming to drink near the Dead Sea on the Moabitic side.

### Ferret (Heb. אַנָקָה *anakah*).

The Ferret is one of the unclean animals in Lev. xi. 30. There is little doubt the ferret could not have been intended by the word *anakah*, which means literally, 'that which groans or sighs.'

It is probable the animal intended was one of the lizard tribe, from the animals amongst which it is included, and also because several of the lizards, especially the geckos, which are very abundant, do utter a low mournful little cry. The Rabbinical writers apparently interpreted *anakah* to mean the hedgehog. This, however, does not find favour with recent commentators, who are more familiar with the zoological features of the country.

The geckos, of which there are several sorts, are very abundant in Sinai and Palestine. They are characterised by the fanlike foot, which gives them their generic name (*Ptyodactylus gecko*), and which enables them to run up walls and cling to ceilings. Their movements are exceedingly rapid and perfectly noiseless. The name gecko is derived from a vibrating sound produced by this lizard's tongue against the roof of its mouth. The com-

monest species (*P. Hasselquisti*) is a small animal but a few inches in length. [See SPIDER.]

### FISHES.

In the Hebrew account of the creation fishes are given a place as one of the great divisions of the animal kingdom. They were spoken of as having been brought into existence prior to the inhabitants of dry land. Their creation is accomplished with that of whales or sea monsters, birds and reptiles.

Although fishes are frequently spoken of in various parts of the Holy Scripture, we find no reference anywhere to a distinction of species, even in places where something like a systematic enumeration of animals is intended. They are referred to as a group in various places, as in Gen. ix. 2, Exod. xx. 4, Deut. iv. 8, and 1 Kings iv. 33. The closest approach to anything of a descriptive nature is in the division of fishes into those that are clean and unclean. 'These shall ye eat of all that are in the waters; whatsoever hath fins and scales in the waters, in the seas, and in the rivers, them shall ye eat. . . . Whatsoever hath no fins nor scales in the waters, that shall be an abomination unto you' (Lev. xi. 9–12). The only fishes forbidden by this distinction were the sheat-fish (*Siluridae*), a group common in Eastern fresh waters; the skates (*Raiadae*), the lampreys (*Petromyzidae*) and the sharks (*Squalidae*). Eels (*Murenidae*) and all sorts of water reptiles were also hence considered unclean. On the other hand, of the fishes in the Sea of Galilee, the *Chromidae* were clean and allowed for food. These are the most abundant and characteristic fishes in the lake. They are allied to the wrasses. There are eight species now known from

these waters, and some of these, notably *C. Tiberiadis*, are amazingly abundant. The fresh-water fishes of Egypt belong chiefly to the bream (*Sparidae*), perch (*Percidae*), and carp (*Cyprinidae*) tribes, as well as *Chromidae*.

The Hebrews appear to have been utterly indifferent to specific characters amongst fish. This is the more strange, when we recollect that Jerusalem was supplied with a fish market (2 Chron. xxxi. 14, Neh. iii. 3, xii. 39, Zeph. i. 10), and that there are numerous references to the catching of fish in the Old Testament. At all times too the Jews attached great importance to the fishery of the Sea of Galilee. Jerusalem, however, appears to have derived its supplies from the Mediterranean (Ezek. xlvii. 10). The Israelites must, moreover, have become familiar with fishing and all its branches when in Egypt (Numb. xi. 4, 5), where the Nile and all its affluents, and the lakes and canals abound in fish, perhaps more than any waters in the world.

In the New Testament this silence is still more remarkable. We should have expected that St. Peter and others of the apostles who lived by fishing would have somewhere referred to the sorts they were in the habit of earning a livelihood by, or that in the miraculous draught some reference would have been made to the eatable and uneatable sorts by name. The Greeks have handed down to us upwards of 400 names for fishes, but not one has been transmitted by the Hebrews. Still we cannot but suppose that when Solomon 'spake also of fishes' he distinguished amongst the great numbers of sorts familiar to him both from the Mediterranean and the inland waters. In the Mediterranean on the Syrian coasts mullets in particular abound. The tunny

(*Thynnus thynnus*) is one of the most important fishes, furnishing food to the maritime people, and being a chief source of their wealth. It reaches a length of six or seven feet, but is on the average about four feet, and is very good eating. The coryphene (*C. hippuris*) is also an excellent fish to eat, and celebrated for the beautiful colours that pass over its body as it dies. It was customary amongst Roman epicures to keep these fishes alive till the beginning of a banquet, so that the guests might not merely witness their magnificent colours, but also feel secure that they were perfectly fresh.

With regard to the fishes of Palestine the most interesting feature to the naturalist is to be found in those of the Jordan system. Nearly half the total number (36) of these fishes are peculiar to the Jordan, and they belong to genera that are chiefly Ethiopian in type or South African. An analysis of the Jordan fishes more than any other zoological group points to the affinity of the Jordan and Dead Sea basin in its natural products with regions much farther south. Of course no living fish is actually found in the Dead Sea.

There are many references to various methods of fishing in the Bible. Of these the most usual was the net, although in many cases this word refers to the catching of wild animals on shore, and not in the water. There are ten words used in the Old Testament to signify nets of different sorts, and it is now impossible to determine upon their exact signification in each case. Several of these are quite general, and merely mean that the article spoken of is a net. Others appear to refer to the manner in which they were used, either by lying in wait or by seizing. The *casting net* and the *draw* or *drag net*, corresponding to our 'sean,' were the most usual.

The former is referred to in Hab. i. 15, Ezek. xxvi. 5, 14, xlvii. 10. The latter, which was probably most used in the Sea of Galilee, from the abundance of boats there, is alluded to in Isa. xix. 8 and Hab. i. 15. In the last passage, 'They take up all of them with the angle, they catch them in their net, and gather them in their drag,' we have a reference to catching fish with the hook and line, as well as with nets. See also Isa. xix. 8, 'they that cast angle into the brooks.' In the New Testament the hook and line are referred to, 'cast an hook, and take up the fish that first cometh up' (Matt. xvii. 27). Hooks were always used with bait, and are still, the refinement of fly-fishing being unnecessary and unknown.

On the coasts of Sinai, at Akaba in the Red Sea, we had a day's fishing with some Arab natives in Egyptian fashion. In the first instance the fisherman obtained his bait by catching some small fry with a circular casting net on the shore. Subsequently we fished with long lines out in the gulf, the lines being sunk by attaching a heavy stone in a slip knot, which was jerked out when a certain depth was reached. At different depths different fishes are usually obtained, and the line, if it sank at all unloaded, would be deprived of its bait long before it reached the requisite forty fathoms. A fish called *hedjib* by the Arabs was excellent eating. It is known at Suez by the name of *jar*. The bait-fry were known as *akadi* and *sahadan*. A shark (*zitani*) was hooked, and a gorgeous vermilion-coloured, scaleless, or 'unclean' fish, called *bossiah*, was cooked, but found bad to eat. Another fish, named *gamar*, a species of dog-fish, was very plentiful, and a large species, which lashed about at the surface (*samul*), swimming very swiftly. This last was probably not a fish at all, but a species of porpoise.

Another method of catching fish spoken of is by spearing them. In Job xli. 7 we read, 'Canst thou fill his skin with barbed irons, or his head with *fish-spears*?' in allusion to this practice, which is still used in the smaller northern rivers of the Lebanon.

There is one fish perhaps particularized in Ezek. xxix. 4, 'I will cause the fish of thy rivers to stick unto thy scales.' This may be taken to refer to the sucking-fish, or remora (*Echineis remora*). It has a sucking disk on the upper part of the skull, and is common in nearly all tropical or warm seas. It is a small species, and is sometimes taken in the British seas. To this fish was attributed by writers of the Middle Ages the most extraordinary power of stopping vessels to which it adhered. It was not the strength possessed by this little creature, as one old writer puts it, but the power it had of 'impressing' upon a large ship at sail the 'quality of immovability,' which rendered it unable to proceed and helpless in the hands of the sailors.

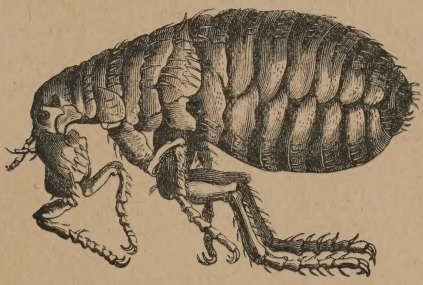
In Matt. xii. 40 Jonah's fish is called a whale. In Jonah it is simply called a great fish. The word κῆτος in the New Testament means any sea-monster, and not necessarily that which we call a whale. As the whole episode is, however, to be regarded as supernatural, and the creature may have been due to divine intervention, it is unnecessary here to speculate upon it.

Among the Philistines, Dagon, i.e. the fish, was the national deity or fish-god. This worship was adopted by the Jews, and temples erected to him. The deity was given the body of a fish, and the face and hands of a man. His chief temples were at Gaza and Ashdod, on the coast south from Jerusalem. Sidon was also

a goddess of a fishy nature amongst the Phenicians. To this worship, we find a reference, as well as to serpent-worship, in Deut. iv. 18, 'the likeness of anything that creepeth on the ground,' and 'the likeness of any fish that is in the waters beneath the earth.' In Siam at the present day fish-worship exactly similar to that of Dagon is carried on.

## Flea (Heb. פַּרְעֹשׁ *parosh*).

The Flea is twice mentioned in the Bible, in both cases in the First Book of Samuel (xxiv. 14, xxvi. 20), where



THE FLEA *(highly magnified).*

David reproaches Saul the king of Israel with pursuing him, although an object as unworthy of his notice as a flea would be. 'After whom is the king of Israel come out? after whom dost thou pursue? after a dead dog, after a flea.' 'For the king of Israel is come out to seek a flea, as when one doth hunt a partridge in the mountains.' No doubt David also insinuates that he would be difficult to catch.

Fleas belong to the aphanipterous or wingless order of insects which undergo a metamorphosis. The

common flea (*Pulex irritans*) is well known from its preying upon man. The flea of the dog (*Pulex canis*) and cat (*P. felis*) are distinct species, but will avail themselves of human blood. Many other animals, as the squirrel, hedgehog, mouse, rat, have their peculiar fleas, as have also pigeons and the common fowl. The flea of the badger is the largest British species. Of the human flea, it is stated the largest specimens used to be found in the old reading room of the British Museum.

The abundance of fleas in the Holy Land is sometimes a very serious annoyance to travellers. They congregate especially about the camping-grounds of Bedouins, and it is prudent to give such localities a wide berth when pitching tents. In the Syrian khans and inns they are sometimes very prevalent, and equally hated by Moslem and Christian.

### Fly.

The word 'fly' or its plural is the translation of two Hebrew words in the Old Testament. The first of these, עָרֹב *arob*, is the term used to designate the swarms of flies sent as a plague upon Pharaoh (Exod. viii. 21, 31), and again, when referring to this visitation in Ps. lxxviii. 45 and cv. 31.

In the first of these passages, the marginal interpretation is 'a mixture of noisome beasts,' which is borrowed from Josephus and the Babylonian Targum. It is, nevertheless, most probable a single species was intended. As the plague is represented as filling the houses of the Egyptians, it is likely that the house-flies (*Muscidae*) are intended. In the warm climate of Egypt these insects are an annoyance that can hardly be overstated. The manner in which they assemble in dense clouds at

such a sun-trap as Akaba, for instance, is almost inconceivable, and the irritation they produce is heightened by the knowledge that they are capable of carrying an infectious sort of ophthalmia, which is a prevalent disorder amongst the Bedouins, from person to person. Owing to the softness of the skin in the warm climate, the house-fly of Egypt is soon able to effect a penetration in tender parts, such as the corner of the eyes, and the vulnerable point speedily becomes a throbbing mass of these abominable insects, who are thus enabled to suck the blood and produce festering sores.

The other term translated by the word fly is זְבוּב *zebub*. It occurs in Eccles. x. 1, 'Dead flies cause the ointment of the apothecary to send forth a stinking savour;' and here the term is probably generically used for the swarms of flies, which speedily cause corruption and pollution in anything capable of being attacked by them in the East. The ointments spoken of are perfumed unguents and cosmetics, so largely used in these countries.

The second passage where *zebub* occurs is in Isa. vii. 18, 'the Lord shall hiss for the fly that is in the uttermost part of the rivers of Egypt, and for the bee that is in the land of Assyria.' [See under BEE.] This word *zebub* has been identified with the modern Arabic ذباب *ḍebab*, which is a name given to a species of gad-fly. A species of Tabanus, or 'breeze fly,' is stated to be common in the valleys of the Jordan and the Nile, and is very injurious to animals. To this genus our 'horse-flies' or 'clegs' belong, which are armed with an arrangement of lancets enabling them to make a clean incision for the purpose of blood-sucking.

Against this pest the Phenicians invoked the aid of

their deity Baal-zebub, the god of Ekron, the lord of the fly. No doubt the term was given, as our 'gad-fly' is, and as *ḏebab* appears to be in Palestine, to any large blood-sucking fly. The largest of our species is *Tabanus bovinus*, which is fortunately not common, but was more than usually so, owing to the hot summer, in 1887. It is almost an inch in length.

Fowl, Domestic. See Cock.

### Fowl.

There are several words so translated in the Bible, both in the Hebrew and Greek portions of the text. עוֹף *oph* is the commonest Hebrew term, and this is used collectively for all kinds of birds, as flying things. In the New Testament the word so translated is also of general signification, including birds of all sorts.

Another word which is frequently rendered 'fowl' is צִפּוֹר *tsippor*. Sometimes it is translated by the synonym 'bird,' and in two passages it is rendered 'sparrow.' [See Sparrow.]

Birds are first mentioned in the first chapter of Genesis as being created on the fifth day. Viewed specifically there are but a small number of sorts distinguished in the Bible, and these are chiefly to be found either in the catalogues of birds forbidden as food in Leviticus and Deuteronomy, or else they are introduced as poetical illustrations in the Prophets and in the Psalms. Among the Jews and other Eastern races, birds were regarded as of very slight importance, and of the great variety of species occurring in Palestine there was little or no recognition until quite recently. It is now ascertained that there are at least three hundred and fifty species

of birds to be obtained in that country, viewing it (somewhat widely) as extending from Lebanon to the neighbourhood of Petra. This area is somewhere about six thousand square miles, and not more than a fifth part of the size of Ireland, which cannot boast of more than two hundred and sixty species. Moreover it is not merely the variety of species that renders Palestine rich in birds, but the extraordinary multitude of individuals. Whether it be the flights of sparrows in the grain, the myriad clouds of swallows along the Judæan plains around Gaza and Ascalon, the swarms of bulbuls filling the air with melody in the Ghor es Saffieh, the dense packs of pigeons either passing during migration or resident around the Dead Sea, or the unusual variety of raptorial birds, some of which are always in view on the wing—always the visitor is impressed with the fact that this class is abundantly represented.

Again, the country is not merely interesting to the lover of birds because they are numerous in individuals and varied in species, but because many rare and unexpected sorts occur. Owing to the sub-tropical climate and peculiar conditions found in the lower parts of the Jordan valley around Jericho and in the basin of the Dead Sea, several species find a home there which would otherwise not exist so far north. Besides these there are some fifteen species, chiefly found in the same district, which are believed to be peculiar to Palestine, and have not been found as yet elsewhere. In all probability the majority of these will yet be discovered in Arabia.

According to the Mosaic law, birds were of two divisions, clean and unclean. The former included all except fish and flesh feeders which were regarded as

unclean. Such a distinction of eatable and uneatable birds would agree fairly well with modern ideas in most civilized countries.

One of the most interesting portions of the study of birds is that of their migratory habits. We find these alluded to in several passages. The times of the arrival of the stork, turtle, crane and swallow are referred to in Jer. viii. 7, and in Cant. ii. 11, 12 the time of the singing of birds and the voice of the turtle are descriptive of spring.

The great majority of birds, probably in species, certainly in individuals, found in Palestine belong to the order *Passeres*, and in few countries in the world is there a larger variety of that order to be found. Amongst these are included the singing birds. We find, for example, that most of the singing birds of Great Britain occur in Palestine, and many others. Nevertheless there are but three allusions to the singing of birds in the Bible. One of them is referred to above from the Song of Solomon. In Eccles. xii. 4 the 'voice of the bird' is spoken of, and in Ps. civ. 12 the fowls of the heaven are said to have their habitation among the branches by the rivers. In the last passage we are at once reminded of the Palestine bulbul, which abounds along the banks of the Jordan and other streams running into the Dead Sea. It is a sweet singer, and an easily tamed bird, and makes a delightful pet, though by no means a hardy one. Pet birds are greatly in request in the East. In Job xli. 5, 'Wilt thou play with him as with a bird?' is probably a thought suggested by pet birds.

The nesting of birds is referred to in Ps. lxxxiv. 3, where the sparrow and swallow are spoken of as finding a place to breed in safety in the temple buildings; and this security is still and always has been afforded by

Easterns to birds which, as it were, claim sanctuary by resorting there to build. It is said that in Athens a man was sentenced to death for harming the birds building in the temple of Æsculapius. And the Moslems are as careful to protect those which resort to the mosques. Other references to the nesting of birds occur, as where the Mosaic law forbids the taking of the dam with any nest which has to be removed; and in Prov. xxvii. 8, where the passage 'As a bird that wandereth from her nest, so is a man that wandereth from his place,' has been taken to refer to the habit which many species have of forsaking their nest when discovered and disturbed. Again in Deut. xxxii. 11, 12, there is a beautiful metaphor taken from the nurture of eaglets from their nest by their parents. [See EAGLE.]

Birds of the unforbidden sort were much in use for food amongst the Hebrews, and such is still the case. Great is the destruction wrought amongst the smaller species by gunners in the neighbourhood of Jerusalem. In early days these were captured by various sorts of nets and snares, to which we have various references. These seem to be similar to those at present in use where gunpowder is not as yet within reach of the natives. In Ecclus. xi. 30 there occurs an allusion to the capture of birds by the use of decoy birds, a method of fowling still in use: 'Like as a partridge taken and kept in a cage, so is the heart of the proud; and like as a spy watcheth he for thy fall.' Another method of fowling is said to be practised at present in Palestine, with short sticks, which are thrown at the partridges or bustards to be procured, and they are thus skilfully disabled and caught. A similar method is in vogue in some countries to cripple and catch rabbits where they are numerous,

the throw-sticks employed being about eighteen inches long and an inch or more in diameter. Possibly this sort of sport is alluded to in 1 Sam. xxvi. 20, where Saul is said to come out 'as when one doth hunt a partridge in the mountains.' The Sinaitic Bedouins of the present day are clever enough in striking the desert partridge with a stone, when certainly it would be difficult to procure suitable throw-sticks.

Of snares, nets and traps, there were probably many sorts. Seven Hebrew words are so translated. Job speaks of four ways of trapping in one passage: 'He is cast into a net by his own feet, and he walketh upon a snare. The gin shall take him by the heel . . . and a trap is laid for him in the way' (xviii. 8, 9, 10). And there are numerous similar uses of these expressions. The usual term used in the Authorized Version is 'snare.' 'Can a bird fall in a snare upon the earth?' &c. (Amos iii. 5).

In two passages in the Bible the word 'cage' occurs, as it does also in the one above quoted from Ecclesiasticus. In Jer. v. 27 we read, 'As a cage is full of birds, so are their houses full of deceit.' The allusion here is to the basket-cage containing birds used as decoys, not to a pet collection. Or it may mean, as in the margin, a 'coop' containing a number of living birds to be sold for food. Again, in Revelation, 'a cage of every unclean bird' signifies properly a 'prison,' and it is unlikely that 'cage' in the modern sense can be intended.

There is no indication to be found in the Bible, that the art of falconry was practised by the Jews, though there is every reason to believe it is of the remotest antiquity amongst Eastern people. Neither can we find

anything to lead us to believe that dogs were used in the chase, although Egyptians and Assyrians employed these animals in this capacity from the earliest times into which we have any clear insight.

### Fox (Heb. שׁוּעָל *shual*).

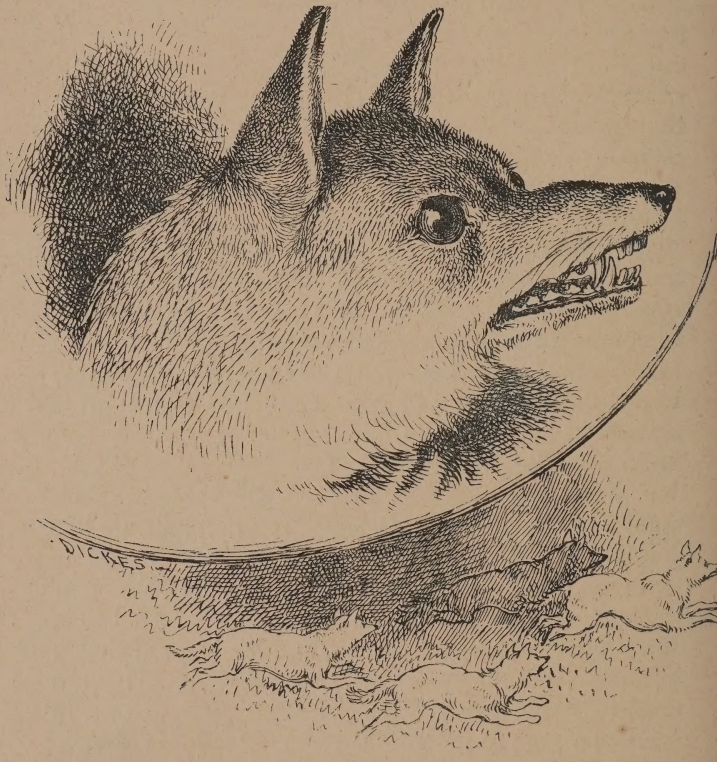
The word *shual*, although always translated 'fox' in the Authorized Version, undoubtedly included the 'jackal' (*Canis aureus*) amongst the Hebrews, and should so be rendered in most of the passages where it occurs, as may be seen by the context.

There are two varieties of fox found in Palestine. In the southern and central parts the Egyptian fox (*Vulpes Nilotica*) is the common species. It is very like our own fox, but a little smaller, and resembles it exactly in habits. In the northern parts of the country, another variety, the tawny fox (*Vulpes flavescens*), is met with. It also closely resembles our fox, but it is larger and of a lighter colour, with a finer fur.

In Ezek. xiii. 4 the false prophets are likened in their cunning to this animal; 'O Israel, thy prophets are like the foxes in the desert.' And the deceitful Herod in Luke xiii. 32 is so described; 'Go ye, and tell that fox.' And, again, where the burrowing habit is referred to in Matt. viii. 20, 'Foxes have holes, and the birds of the air have nests; but the Son of man hath not where to lay His head,' it is probable that the 'fox' is referred to. In another passage in the Old Testament 'foxes' are mentioned as destroying the grapes. But both fox and jackal have this predilection in the East, and both animals may in fact be regarded as omnivorous. It is stated that packs of jackals often commit great destruction amongst the vineyards, and the fondness of foxes

for grapes is proverbial. This is the more characteristic in Palestine, since animal food or carrion is scarce.

In Ps. lxiii. 10 no doubt the jackal is intended;



FOX.

'they shall fall by the sword; they shall be a portion for foxes.' Foxes are not properly to be regarded as feeding upon carrion. Jackals, on the contrary, prefer it,

and resort to graves and cemeteries for that especial purpose. Hence in Lam. v. 18, 'jackals' are also most likely intended.

Jackals never hunt alone, but assemble in packs of twenty to fifty or more, as a rule. In this habit they differ entirely from the fox, which is under no circumstances gregarious. From this fact it is most probable that 'jackals' were the animals turned loose in pairs by Samson (Judg. xv. 4) amongst the standing corn of the Philistines, with firebrands tied to their tails. It would be absolutely impossible that any such stratagem should succeed with foxes, who would inevitably pull in opposite directions, no matter how long a line might be given to the brand drawn by each couple. But jackals, accustomed to hunt in droves, might go straight across through fields and crops. Moreover the difficulty of procuring three hundred foxes would be very great, since the animals were very much fewer in number, and would require to be captured singly. An experiment to see how jackals actually would behave under such treatment would be very interesting, if it could be conducted without cruelty.

In the Authorized Version the word 'jackal' does not occur. It will be seen, however, that it is probable the animal was intended in many passages. Further instances will be found in the article BEHEMOTH, where I have endeavoured to show that *îyyîm*, translated 'wild beasts of the islands,' should be rendered 'jackal.'

FROG (Heb. צְפַרְדֵּעַ *tsephardea*).

Frogs are mentioned in the Bible in connection with the second of the Egyptian plagues (Exod. viii.), and again in Ps. lxxviii. 45, cv. 30. In Rev. xvi. 13 unclean

spirits are spoken of as being in the likeness of frogs which came out of the mouth of the dragon.

There is only one species of true frog in Egypt at present. This is the edible frog (*Rana esculenta*), which abounds on the Continent and is also an inhabitant

THE EDIBLE FROG.

of some parts of Southern England. Other species of the tailless amphibians found in Palestine and the regions adjoining are the green toad (*Bufo viridis*), and less commonly the African toad (*Bufo regularis*). The beautiful little tree frog (*Hyla arborea*) is common

in Sinai and Palestine. It is well known in Southern Europe.

The edible frog fills the air at night with its deafening croaking in those places where there is sufficient marshy ground, as at the Dead Sea or at Tel el Milh, near Beersheba. The numbers which congregate together are most astonishing, and if after a few hours' hopeless wakefulness one leaves the tent in despair, it is probable that the first marshy pool examined will appear almost to break up and vanish, as the frogs which filled it *en masse* move away in detachments. But they do not cease croaking because they are disturbed. They will surround the intruder, and croak apparent defiance on all sides and their persistent monotony is worse than either jackals, cicadas, or dogs.

Toads are not mentioned in the Bible, and there can be no question as to *Rana esculenta* being the animal meant in the passages referred to.

### Gier Eagle (Heb. רָחָם *racham*).

The Gier Eagle, with the swan, cormorant and pelican, is one of the birds forbidden for food in Lev. xi. 18, Deut. xiv. 17.

Many birds have been suggested, from various lines of reasoning, as the species which is intended here. There seems, however, to be no reason to doubt that the *racham* of Scripture is identical with the modern *racham* of the Egyptians, the Egyptian vulture (*Neophron percnopterus*). The word *racham* also signifies 'love,' and upon the desire to harmonize this idea with that of the ornithological interpretation some curious lines of argument have been grounded.

The Egyptian vulture has been described by Bruce

under the name of *rachamah*, by which it is known to the Moors and Egyptians. The Arabic name is *ach-bobba.*

The Egyptian vulture is a most repulsive bird upon close inspection, in consequence of its habits of feeding on offal and carrion. On the wing, however, it is a handsome species, with a bold contrast of colours in the pure white and dark brown of its plumage. It is a much smaller species than the griffon, being about the size of a raven, and, like that species in northern climates, it is of the utmost value as a scavenger. In this capacity it is protected by stringent laws, and in consequence it is a common bird and quite fearless—almost domesticated—in its habits. In most villages and in the suburbs of larger Egyptian towns a few pairs are always to be seen, and when travelling through any district, whether desert or cultivated, a pair or two are almost invariably in view.

These birds—Pharaoh's hens or chickens, as they are usually called—live in pairs, and never congregate in flocks, except over offal, but remain paired for life; and it may be that the word which signifies love became their name from this habit. In Palestine they are migratory, and travel south to Africa for the winter, but in spring and summer they abound. They do not breed in colonies like the griffon, but make solitary nests low down in cliffs. The beak, feet and claws are feeble, and at once distinguish it from the larger raptorial birds. The bill is hardly curved and very different from the strong weapon of the eagle and griffon vulture. When it cannot obtain carrion or excrementary matter it will prey upon rats, mice, small lizards or snakes and even insects. Rotten fish or other garbage on the

sea-shore also suit it admirably, and it has been given the credit of being the foulest feeder that lives. The total range of this bird is from the Pyrenees to the Cape of Good Hope in a north and south direction. Eastwards they extend to India, and a specimen or two has been obtained in England.

### Glede (Heb. רָאָה *raah*).

The Glede is enumerated amongst the unclean birds in Deut. xiv. 13, and distinguished from the kite. In the parallel passage in Leviticus the word does not appear, and on this account the reading has been questioned. The word is derived from a root signifying keenness of sight, and this is an argument in favour of its being a bird of the hawk tribe, amongst which it is enumerated. There is nothing else to help us in identifying it, as it does not occur in any other passage in the Bible.

In the north of England 'glede' is applied to the buzzard, elsewhere it is synonymous with kite. We may perhaps hence assume, with Canon Tristram, that the buzzard is the bird intended amongst the birds of prey, if indeed it is to be distinguished from the kite, and is not merely an error of repetition.

There are two buzzards in the Holy Land, the common buzzard (*Buteo vulgaris*), and the long-legged buzzard (*Buteo ferox*). The former is not uncommon in the British Islands, and is plentiful along the coast of Palestine. It is a large and graceful bird, but without the swiftness of flight of the falcons, to which it is closely allied. In ancient times it was regarded as a very inferior hawk, being unfit for the purposes of falconry on account of its sluggish flight. It does not,

like the peregrine or merlin, chase its prey or strike at it on flight, but rather watches for it from a position of vantage, and pounces at it unexpectedly from its post. It is probable that *raah* might be taken generally to signify the larger species of hawk, with the buzzards, these being not elsewhere enumerated specially. Of falcons there are three large species, *Falco sacer*, the saker falcon; *Falco lanarius*, the lanner; and *Falco peregrinus*, the peregrine. Of these the lanner is much the commonest in Palestine.

### Gnat (Gk. κώνωψ).

The Gnat is mentioned only in the proverbial expression in Matt. xxiii. 24, where our Saviour says, 'Ye blind guides, which strain at a gnat and swallow a camel.' The Revised Version accepts the reading of Dr. Adam Clarke and other commentators, 'strain *out* the gnat,' the idea being that in hot countries small insects, mosquitoes, and others often got into the wine bottles and glasses, which would then require to be carefully strained. But this minuteness of detail, which detracts from the generality of the sense in which the metaphor is used, appears rather to vitiate the simple directness of the proverb. The obvious signification is generally the best. The idea is that of making an effort or straining at the act of swallowing small things, but none whatever over the more weighty and important considerations.

It is needless to endeavour to determine any particular insect by this term. It is used to express the smallest familiar living thing in contrast with the largest. Insects such as we should call 'gnats' are very abundant in Palestine, especially in damp places, and

it is not improbable that the commonest of these, the mosquito, may have been suggested to the minds of the hearers.

Gnats or mosquitoes (*Culicidae*) are but too well known, from their blood-sucking propensities. Our common English gnat is but a trifling annoyance compared with the formidable pests of warm climates. Many species of *Culex* of varying degrees of virulence have been described from different parts of the world. Nine are found in Great Britain. None of these, however, are such plagues as the near allies of the gnats, the midges. The order of insects to which these flies belong is termed *Diptera*. They are insects with a perfect metamorphosis and a mouth modified for sucking.

GOAT (Heb. עֵז *ez*).

The most common term for this important animal in the Hebrew was *ez*, which is used either of a he-goat or a she-goat. Several other words are used which are translated 'goat.' With the exception of יָעֵל *yael*, 'the climber,' which is the ibex or wild goat, and אַקּוֹ *akko*, also translated 'wild goat,' the other terms almost always refer to the he-goat. These are צָפִיר *tsapheer*, 'an he-goat,' Dan. viii. and Ezra vi. 17, viii. 35; שָׂעִיר *saeer*, a 'hairy goat,' but sometimes translated 'devils,' as in Lev. xvii. 21, 2 Chron. xi. 15, and 'satyrs,' as in Isa. xiii. 21, xxxiv. 14; it also denotes a kid in the Pentateuch; עַתּוּד *atud* is the common word for the he-goat, the leader of the flock, it occurs only in the plural עַתּוּדִים *atudim*, and means metaphorically the 'princes,' and literally the 'best-prepared;' תַּיִשׁ *tayish*, which signifies the 'striker' or 'butter,' is translated 'he-goat' in Prov. xxx. 29, 31, and elsewhere.

Goats and sheep are included in the *Bovidae*, or hollow-horned ruminants. Between goats (*Capra*) and sheep (*Ovis*) there are many intermediate species, so that it is almost impossible to draw an exact line separating the one from the other. Broadly speaking, goats are bearded, and sheep are not, while in the former the horns are usually flattened from side to side, rough or annulated in front, and arched backwards. In sheep the horns are more cylindrical, with a lateral bend and a downward curl, and often twisted in corkscrew fashion.

The domestic goat is believed to be descended from the ibex. [See IBEX.] It is found now in almost every part of the world. It was one of the clean beasts which was permitted as a sacrifice and for food to the Israelites. It was the animal selected on the day of solemn expiation to be set at liberty, as *Azazel*, or the scape-goat. The kid (*gedi*) was considered a delicacy (Gen. xxxviii. 16, Judg. xv. 1, Luke xv. 29), and is still the constant dish at any feast or in the exercise of hospitality amongst the Arabs. Amongst the patriarchs large herds of goats denoted their wealth. Nabal possessed a thousand goats (1 Sam. xxv. 2), and they are still abundant and herded and tended as they were of old. The same shepherd who looks after the sheep also herds the goats, and they mingle in their pursuit of food. At night, or when being driven, they keep apart in separate droves.

Usually, however, they are found in different localities, a hilly country being better adapted for the goat than the sheep. Syrian goats are usually black. A different short-eared breed is found in the north. At the Dead Sea and elsewhere a very long pendent-eared breed with very small horns is common.

The uses of the goat are manifold. Besides being itself valuable for food, its milk is esteemed an important article. Cheese and butter are formed from it, and in villages amongst the mountains goats are the sole producers of these substances.

The skin of the goat is used for making the bottles that are in use everywhere for holding wine or water. Stone jars are used for keeping these liquids in store, but when on the move the goatskins are the inevitable accompaniment of every Arab caravan or travelling party. These skin bottles are the entire skin tied up at the apertures and at the openings whence the legs and carcase were removed. They remind one of the pigskin floats used by fishermen in several parts of Britain. They can be patched and mended to any extent when worn. Many references to these bottles occur in Scripture: 'Wine bottles, old and rent and bound up' (Josh. ix. 4); 'I am become like a bottle in the smoke' (Ps. cxix. 83), referring to the dried up and cracked appearance these skins obtain if allowed to become parched.

The hair of the goat was also of use. A pillow of goats' hair is spoken of in 1 Sam. xix. 13, and goats' hair was spun by 'all the women whose heart stirred them in wisdom,' to form curtains and coverings for the tabernacle. Goats' hair of various kinds is of much use for clothing. Mohair, Angora, and Cashmere goats are the best sorts, but whether either of these breeds were cultivated formerly in Palestine we are not aware. The mohair goat is said to be found sparingly at the present time in Northern Syria. It is probable that when all the parts of that sacred structure were of the costliest nature, the hair of the common goat would have been

hardly regarded as suitable. Goats' hair of this commoner description is at present manufactured into coarse cloth and used for many purposes in Palestine.

The most marked varieties of the domesticated goat in Palestine are the Syrian goat (*Capra mambrica*) and the Angora goat (*C. angorensis*), but the latter is seldom met with in Palestine Proper.

Goats have done much to exterminate shrubby vegetation in Southern Syria, and thus helped to keep the regions in a desert condition. No animals are more destructive to growing young timber than goats; and as they inhabit almost all parts of the world, either native or naturalized, and will endure all sorts of weather, their depredations upon the arboreal vegetation have been often widespread and injurious. Thus at St. Helena goats were introduced in 1513. In 1700 it was seen that the forests were fast disappearing, and with them many valuable trees, including the ebony. Ultimately a highly interesting and peculiar flora has been exterminated, almost entirely by the goats.

GOAT, WILD (Heb. יָעֵל *yael*, 'the climber').

The Ibex, or wild goat, is found in the mountain regions of Europe and Western Asia. There are several varieties, most of them closely resembling each other. That of the Alps is the best known, and is very similar to the Beden (*Capra Sinaitica*) or ibex of Southern Palestine and Arabia Petræa. The Arabian variety is lighter in colour than its European congener and the horns are of a slightly different shape. Another variety, that of the Assyrian monuments, the paseng (*Capra aegagrus*), is by some believed to be the parent of the domesticated goat. The wild goat is spoken of in

1 Sam. xxiv. 2; Saul 'went to seek David upon the rocks of the wild goats,' in the wilderness of Engedi. And in Job xxxix. 1, 'Knowest thou when the wild goats bring forth?' and in Ps. civ. 18, 'The high hills are a refuge for the wild goats.'

Engedi (*Ain Jiddy*), or the Fountain of the Goats, is named after these animals, and they are still sometimes to be seen there. Canon Tristram obtained specimens from the natives in that neighbourhood. When clambering up the steep slopes in 1884 above Wady Tufileh, at the south-western end of the Ghor es Safieh, the plain at the southern end of the Dead Sea, ibexes were disturbed by me about two hundred yards off. One or two also were seen on Mount Hor. They go in small herds, and appear to be less rare than is generally reported by those who travel through the country and keep to the ordinary routes. They are very shy, and dwell in the less accessible fastnesses amongst the mountains, but the Bedouin hunters are always ready to obtain specimens for about five to ten shillings. The flesh is said to be excellent eating, and it was no doubt this venison that Isaac sent his son to procure for him with quiver and bow (Gen. xxvii). The flesh of the gazelle, the only common species of deer, is on the other hand dry and inferior meat.

Another Hebrew word, אַקּוֹ *akko*, as has been already stated, is translated 'wild goat' in Deut. xiv. 5, where it is amongst the animals permitted to be eaten. Whether this is a correct translation, and if so whether any particular species of wild goat is intended, we have at present no means of ascertaining.

GRASSHOPPER. See LOCUST.

### Hare (Heb. אַרְנֶבֶת *arnebeth*).

The Hare is included amongst the unclean animals in the Mosaic law; 'because he cheweth the cud, but divideth not the hoof, he is unclean unto you' (Lev. xi. 6, Deut. xiv. 7). The hare, like the coney, was no doubt supposed to chew the cud, from its habit of constantly moving its jaws about, a habit which is perhaps acquired to keep the incisor teeth down to the requisite length, in order to prevent their overlapping as they occasionally do. The hare has neither the teeth nor the stomach which are characteristic of ruminants, and enable them to return the partially digested food to the mouth and masticate it afresh. There can however be no doubt the hare is intended, since ارنب *arneb* is the present Arabic name for this animal, which is common in the Holy Land; and the above explanation is the best which has been offered of the difficulty afforded by the text.

There are several varieties of hare in Palestine, if we include the Sinaitic confines. The ordinary species of the central districts, known as *arneb*, is *Lepus syriacus*, which is very like our English hare, only a little smaller, and peculiar to Syria. There are also the Egyptian and Sinaitic varieties, which may be obtained in the southern districts. The former is the usual species found in South Judæa, and of a lighter colour than the last. The hare of Sinai is considerably smaller than either of the above, and its legs and ears are longer in proportion. It is an extraordinarily active and swift little creature, but stupid, and allowing itself to be shot by those most clumsy gunners, the Bedouins. This hare is occasionally seen in the Arabah towards the Dead Sea from Sinai.

Hares belong to the rodent group of mammals. The flesh is now highly prized as it was also by the Romans in former times, though forbidden to Jews and Mahometans. The rabbit, which is a species of the hare tribe, is not found in Palestine.

HART (Heb. אַיָּל *ayyal*). HIND (Heb. אַיָּלָה *ayyalah*).

The Hart is given among the animals permitted for food in Deut. xii. 15, xiv. 5, xv. 22. In Solomon's provision for one day are included 'harts' and 'roebucks' (1 Kings iv. 23), showing that they were in regular use as food for those who could obtain them. Harts are spoken of in Lam. i. 6, 'her princes become like harts without pasture,' and in Ps. xlii. 1 we find the familiar and beautiful simile of the Psalmist, 'As the hart panteth after the water brooks,' to express his zeal in serving the living God.

There can be no doubt, from the above quotations, that some animal, which was at any rate tolerably well known, is meant by *ayyal*. Moreover, there are several places in Palestine whose names are derived from this word, signifying deer. 'Ajalon,' signifying deer-pasture, occurs as the name of two different cities (Josh. xxi. 24, Judg. xii. 12). Mount Ajlun in Gilead is from the same root.

The Hind is even oftener mentioned than the Hart, chiefly as a poetical image. The 'loving hind' is spoken of in Prov. v. 19, and their fleetness and agility are referred to in Gen. xlix. 21, 'Naphtali is a hind let loose,' and in 2 Sam. xxii. 34, 'He maketh my feet like hinds' feet,' and again in Isa. xxxv. 6, 'Then shall the lame man leap as an hart.' Also in Solomon's Song ii. 8, 9, 'The voice of my beloved! behold, he cometh

leaping upon the mountains, skipping upon the hills. My beloved is like a roe or a young hart.'

A characteristic of deer is their careful and jealous supervision of their young. Another is that their extreme timidity sometimes causes the hinds to cast their young upon receiving a sudden alarm; but their practice is to withdraw to hiding-places in order to give birth to their fawn. Thus Job [xxxix. 1] refers to this secrecy; 'Canst thou mark where the hinds do calve?' and the grand image, 'The voice of the Lord maketh the hinds to calve' (Ps. xxix. 9), derives fresh force from the knowledge of their habits. And their extreme love for their young adds vivid strength to the allegorical prophecy of Jeremiah (xiv. 5), 'the hind also calved in the field, and forsook it, because there was no grass.' The hunger which could force an animal so tender as the hind to desert its young, and the desolation which could be so absolute that one with such powers of movement could find no grass, must have been indeed extreme.

What particular species of Cervus was common at the time of the Biblical writings we cannot now determine. Some sort of deer was certainly meant by the word *ayyal*. Possibly it was the fallow deer (*Cervus dama*), which is still rarely met with on the northern confines of Palestine, but this identification is only based upon conjecture. It is not unlikely, however, that the fallow deer was formerly common in the wooded parts of Palestine. [See FALLOW DEER.]

HAWK (Heb. נֵץ *nets*).

The Hawk is mentioned as an abomination among fowls, and not to be eaten, in Lev. xi. 16, and again in

Deut. xiv. 15. In each of these passages the name is used in a generic signification, with the words 'after his kind' appended, showing that the sacred writer recognized the large variety of the hawk tribe (*Falconidae*).

In Job xxxix. 26 there is another reference, 'Doth the hawk fly by thy wisdom, and stretch her wings toward the south?' This is generally understood to refer to the migratory instincts of most of the hawks found in Palestine, several of which are summer visitors, and therefore fly south to a warmer climate in North Africa at the approach of winter. Not a few are, however, winter visitors, and fly north at the approach of summer, as, for example, the red kite (*Milvus ictinus*). But it was the movements of the summer species that were most familiar and suitable for illustration. The black kite (*Milvus migrans*) is an abundant summer migrant all over Palestine, and crowds especially about villages. The hobby (*Falco subbuteo*), the lesser kestrel (*Falco cenchris*), the red-legged hobby (*Falco vespertinus*), and the Levant sparrow-hawk (*Accipiter brevipes*) are all summer visitants to Palestine, and fly south at the close of summer. Several other diurnal birds of prey of the family *Falconidae* are found in the Holy Land. These are buzzards and harriers, large hawks which would fall more naturally perhaps under the word רָאָה *raah*, translated kite. [See KITE, GLEDE.]

It has been suggested that flying south may refer to the power possessed by birds of this group of flying into the sun's eye, a power believed by the ancients peculiar to the eagles and hawks; but we prefer the former sense, and the full force of the passage would

be, 'Doth the hawk know, through thy wisdom, her period for migrating, and stretching her wings to the south?' It is by the guidance and providence of God that her instinct leads her to migrate, and not through man's wisdom and direction.

### Heron (Heb. אֲנָפָה *anaphah*).

The Hebrew word translated Heron is amongst the unclean birds enumerated in Lev. xi. 19, Deut. xiv. 18, 'and the stork, the heron after her kind, and the

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lapwing and the bat.' From the appended words 'after her kind,' the term was evidently used in a generic sense. The etymological sense of the word *anaphah* is 'snuffing' or 'breathing short from anger,' from the root *anaph.* There appears to be no other clue to the signification, and it is difficult to determine this to be either heron or any other species. As a consequence seven or eight species have been proposed, none of them being better than merely conjectural.

Under the order *Herodiones* are included herons, bitterns, and egrets (*Ardeidae*), storks (*Ciconiidae*), spoonbills, and ibises (*Plataleidae*), and flamingos (*Phoenicopteridae*). There are thirteen or fourteen species of these birds to be found in the marshes of Palestine, several of them in large numbers. The buff-backed heron (*Ardea bubalcus*) is the commonest resident kind. The little bittern (*Ardetta minuta*) is also plentiful and the marshes of the Jordan, the Lake of Galilee, and those along the coast are tenanted by one or other of these birds or their congeners.

Herons live upon fish, frogs, and other aquatic animals. Being flesh-feeders, they would come under the division of unclean birds. [See FOWL.] Our common heron is not rare in the Holy Land, and all the group have a very wide range, extending throughout the world excepting the Polar regions. In this country herons breed in trees, although when these are absent I have found them making their nests in Kerry in Ireland in sea cliffs; and for the same reason in Palestine they breed among reeds, papyrus, and tall aquatic plants.

Although herons would now be regarded as uneatable in most civilized countries, and perhaps were also, as we have seen, forbidden amongst the Israelites, this has not always been the case. In the time of the Plantagenets herons were regarded as a great delicacy in England, and stood at the head of the game in all great feasts and state banquets. In the time of the Tudors also it is said that as many as a thousand egrets were served up at a single entertainment during the reign of Henry the Fourth, and these birds appear to have fetched the highest price of all water fowl. The egret, formerly common in the English fens, is a very beautiful bird,

pure white, and larger than the heron, with long train feathers.

### Hornet (Heb. צִרְעָה *tsirah*).

The Hornet is mentioned three times in the Old Testament. All the ancient versions agree in the translation of the Hebrew word *tsirah*. In each passage this insect is mentioned as a weapon in the hands of the Lord with which to punish the Canaanites and drive them from their habitations; 'I will send hornets before thee, which shall drive out the Hivite, the Canaanite, and the Hittite from before thee' (Exod. xxiii. 28), and a similar mention occurs in Deut. vii. 20, and Josh. xxiv. 12.

Hornets are abundant in Palestine, and no doubt they were so in former times. In Josh. xv. 3 is mentioned a city of Judah named Zoreah, or 'place of hornets,' and whether the threat be regarded in a literal sense, or used as a forcible image, its appropriateness is apparent. There are historical instances of hornets having rendered certain districts uninhabitable, and by their abundance and the frequency of their attacks, of their having driven people from their homes. Ælian (lib. xi. c. 28) informs us that the Phaselites, a people dwelling about the mountains of Solyma, were driven from their country by wasps. Nevertheless it is probable that the insect is used as a metaphorical illustration. In Josh. xxiv. 12, 'I sent the hornet before you, which drave them out from before you, even the two kings of the Amorites; but not with thy sword nor with thy bow,' reads more like an Eastern image than an account of an event. In Deut. i. 44, and elsewhere, the 'bees in Seir' are accredited with similar powers. The writers of the Talmud took the literal view, and enforced it by statements of how one

could sting a man, and four could sting a horse to death, but the sting should be in the eye.

The hornet belongs to the same genus (*Vespa*) as the wasp, and forms the group next the bees in the *Aculeata*, or stinging hymenoptera. The commonest species met with in Palestine and the warmer parts of Southern Europe is *V. Orientalis*, which is distinct from the British species, *V. crabro*. The Oriental hornet does not appear to be irritable, but permits of specimens being procured

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without difficulty. They are fond of flitting about wells and gardens, and sometimes fight with one another with great determination. They have a very wicked appearance, and a peculiarly long-bodied species obtained in Sinai looks most alarming. It is probably only when their nests are disturbed that they are really dangerous. Nearly fifty species of wasp and hornet have been obtained from Sinai and the adjoining parts of Egypt and Arabia.

## Horse.

Several Hebrew words are translated 'horse' in the Bible. The terms usually used are סוּס *sus* and פָּרָשׁ

*parash*, of which the former were chariot horses, and the latter cavalry horses and of a lighter build for riding. *Parash* also signifies horseman, and in some cases the correct sense is lost sight of in the Authorised Version, as in Ezek. xxvii. 14, 'They of the house of Togarmah traded in thy fairs with horses and *horsemen* and mules,' where the rendering should be 'driving-horses and riding-horses;' and in Joel ii. 4, 'The appearance of them is as the appearance of horses; and as horsemen, so shall they run,' where *parash* should be translated 'riding-horses.' So in Gen. l. 9, Exod. xiv. 9, 17, Hab. i. 8, Ezek. xxvi. 10, where 'horsemen' occurs, the translation should be horses or riding-horses. In Isa. xxi. 7, 'He saw a chariot with a couple of horsemen,' the original is *parash*. In 1 Kings iv. 26, 'Solomon had forty thousand stalls of horses for his chariots, and twelve thousand horsemen,' should be, 'twelve thousand cavalry horses.'

Another term for 'horse' is רֶכֶשׁ *rekesh*, to describe a swift horse, and one used as the royal post in Esth. viii. 10, 14. In this passage, as also in 1 Kings iv. 28, the word is rendered 'dromedary.' In Mic. i. 13 it is translated 'swift beast,' in view of rapid travelling. רַמָּךְ *rammak* in Esth. viii. 10 is used for a mare, and does not occur elsewhere. סוּסָה *susah*, in Cant. i. 9, is translated a 'company of horses' as a collective term, but it may be better translated 'mare.'

The horse is never spoken of in the Bible except with regard to his usefulness in war. Out of many instances only one can be interpreted in any other sense. This exception occurs in Isa. xxviii. 28, 'Bread corn is bruised; because he will not ever be threshing it, nor breaking it with the wheel of his cart, nor bruise it with his horsemen' (horses). But even here there is no

reason to suppose that the horse was employed except as a means of trampling out the grain in an entirely unskilled fashion. In Gen. xlvii. 17 we meet the first mention of the horse in Scripture, where Joseph exchanged bread with the Egyptians in the first year of the famine for horses and flocks and cattle. Amongst the Israelites horses appear to have been rare in early times. There are none mentioned as belonging to the patriarchs, and their first acquaintance with the animal would appear to be through the Egyptians. Subsequently, after the departure of the Israelites from Egypt, an order was expressly issued by Jehovah to their ruler Moses concerning the future king, 'he shall not multiply horses to himself, nor cause the people to return to Egypt, to the end that he should multiply horses; forasmuch as the Lord hath said unto you, Ye shall henceforth return no more that way.' Owing to this edict these animals were not cultivated. The Land of Promise was too hilly and rocky to be much benefited by their services, and the occupations of the people being agricultural they neglected to breed animals whose uses were mainly warlike.

In the time of the Judges the Canaanites had war chariots and horses, but the Israelites had not. In Saul's reign the Israelites of several tribes made war with the Hagarites and other Arabian peoples, and took much plunder of cattle, of camels, sheep, asses and men; but no mention is made of horses; and it appears that the breeding of horses was not then known in Arabia, whose inhabitants confined themselves to the use of the camel.

David appears to have commenced the use of war horses on a small scale. His enemies opposed him with strong forces of cavalry, and he found himself unable

otherwise to cope with their chariots on the plains of Palestine. Usually the Israelites had confined their conquests to the upper regions of the country, where horses were unsuitable. But David, after he defeated Hadadezer, and captured a thousand chariots and their horses, with seven hundred cavalry, selected for himself enough for one hundred chariots, and then houghed the rest (2 Sam. viii. 4), thus showing that he had no intention of 'multiplying horses.' Solomon was the first who regularly established a considerable cavalry force, and imported them largely from Egyptian sources (1 Kings x. 26, 2 Chron. ix. 28). He had forty thousand stalls of horses for his chariots and twelve thousand cavalry. These were procured from Egypt and Syria, and their value is stated at an hundred and fifty shekels of gold.

The use of the chariot is early mentioned. Pharaoh made ready his chariot to pursue the Israelites (Exod. xiv. 6). So long as the warfare was conducted in the mountainous regions the Israelites had nothing to fear. But their successful invasions were reversed when they met the Canaanites in conflict on the maritime plains. With his nine hundred chariots of iron Jabin oppressed the children of Israel mightily for twenty years (Judg. iv. 3). It is probable that the Israelites themselves afterwards employed these scythe chariots; but they are always to be regarded as a nation of infantry. In 1 Kings xx. 23 we read that the servants of the king of Syria reported of the Israelites, 'their gods are gods of the hills; therefore they are stronger than we; but let us fight against them in the plain, and surely we shall be stronger than they.' On the other hand, the Egyptians were essentially a nation of cavalry, and the later kings

of Israel relied much on the help of Egypt for chariots and horses. The Egyptian breed of horses was very excellent, and, judging from the delineations on their monuments, in all respects the same as the Arabian, which was probably directly derived from Egypt. The Assyrians were also famous for their horsemen and chariots, and against them the Israelites required Egyptian aid. The Assyrian horses to this day are a splendid breed, and, judging from the sculptures of Nineveh, they were equally fine in early times. The horses of the Chaldeans are stated by the prophet Habakkuk to be 'swifter than the leopards and fiercer than the evening wolves' (Hab. i. 8). Layard gives the Mesopotamian breed of horses of the present day the highest praise. So also does Palgrave those of Central Arabia, but, strange as it may appear, horses must be regarded as of recent introduction into Arabia compared with other adjoining countries. A native of Central Asia, and a natural companion of the Turkoman and Mongolian, the horse seems to have migrated on the one hand to Northern India on the east, and on the other perhaps to Central Europe in a semi-cultivated state in early times. From Mesopotamia he appears to have spread to Syria and Egypt, and it was hardly before the dawn of the Middle Ages that the horse was introduced into Arabia.

There is little or no mention in the Bible of the specific qualities of the horse or delineations of its parts, nor is there any division of breeds nor recognition of especial value attached to any particular race or animal. The splendid poetical description of the war-horse in Job (xxxix. 19–25) conjures up the picture of war by means of one of its most typical and majestic accompaniments,

and thereby produces a thrilling equestrian image, but it is not written so much by a lover of a horse as by a warrior. With reference to their equipment, the bit and bridle are frequently mentioned (Ps. xxxii. 9, 2 Kings xix. 28, Prov. xxvi. 3). This 'bridle' was placed over the nose of the animal (Isa. xxx. 28). Probably 'bit' or 'curb' would be a better rendering in most passages where it occurs. In Ezek. xxvii. 20 we have 'precious clothes for chariots' mentioned, and the Assyrians at this period are known by their sculptures to have decorated their horses with bells round their necks and tassels to their bridles. In Zech. xiv. 20 we read that 'there shall be upon the bells of the horses, Holiness unto the Lord.'

The shoeing of horses is of comparatively recent origin, and is not mentioned by classical writers. Accordingly the hardness of the hoof in ancient times was of the utmost importance. Where Roman emperors used shoes of leather or iron for their horses, the foot was encased and the shoe tied on. The practice of nailing on the shoe is modern. Amos (vi. 12) says, as of an impossibility, 'Shall horses run upon the rock?' And in Isa. v. 28, 'their horses' hoofs shall be counted like flint,' is given as an excellent quality. Again in Judg. v. 22, the allusion to the 'horse-hoofs broken by the means of the prancings, the prancings of their mighty ones,' is a contemptuous reference to the inferiority of the enemy in this respect.

Of the horse, as of the dog, there is an almost complete lack of detailed description in the Scriptural accounts. We do not anywhere find their amiable or noble qualities spoken of as rendering them individually companionable or loveable to man. In the Holy Land,

when riding was resorted to, the camel, the mule, or the ass was the animal made use of. Saddles were not resorted to till a later period.

At the present time throughout Syria and down to the borders of the desert, as well as in Arabia Petræa, a small and excellent breed of the horse is everywhere in use. Roads are of rare occurrence, the only two worthy of the name in Palestine being a bad one from Jaffa to Jerusalem, and an excellent one from Beyrout across Lebanon and Hermon to Damascus. But no matter what the nature of the country, whether up the mountains or down the dry water-courses, nothing comes amiss to the Syrian horse, and there is probably nowhere in the world a more sure-footed beast of burden to be found. Add to this that they are docile and spirited, willing to the last extremity, and apparently delighting in their own security and power of motion, and it will be inferred that in one respect at least Palestine has been a gainer since Biblical times.

HORSELEECH (Heb. עֲלוּקָה *alukah*).

In Prov. xxx. 15 we find the only mention of the Horseleech, 'The horseleech hath two daughters, crying, Give, give. There are three things that are never satisfied, yea, four things say not, It is enough.'

The Arabic name for the leech is علقة *alak*, which is no doubt identical with the Hebrew *alukah*. The word is derived from a root which means 'to adhere,' and the name is applied specially to the leech of the Nile. In the passage quoted the horseleech is adduced as a type of insatiable appetite. Amongst all peoples the greed of these worms for blood has been proverbial.

In Palestine the horseleech (*Haemopis sanguisuga*),

the medicinal leech (*Hirudo medicinalis*), and several others of the leech family are common, the two specified being very abundant.

Leeches form the subclass *Hirudinea* of the class *Annelida*, or ringed worms. The horseleech is not a true leech, and the term is used with some latitude, species of two different genera associated with true leeches being so named. The present species is very common

HORSELEECH.

in Egypt, and the soldiers of Napoleon are said to have suffered much from it in his campaign, their horses and cattle being also attacked. The body is four inches long, widening backwards, the mouth is large, protruding above, and there are ten eyes. In colour it is green and black above, and yellowish-green on the belly. It lives in lakes and ponds. True leeches are commoner in the tropics, living amongst damp vegetation, and apparently especially fond of European blood.

IBEX. See GOAT, WILD.

JACKAL. See FOX.

## HYENA.

The Hyena is not actually mentioned anywhere in the Bible, but the term צָבוּעַ *tsabua* in Jer. xii. 9, trans-

lated 'speckled bird,' probably refers to the hyena. The word signifies, according to its etymological sense, 'streaked,' and the Septuagint translates it hyena. It may be mentioned also that the Arabic name of the hyena is *dhabba*, and it also means 'striped' or 'spotted.' The word occurs in one other instance as a proper name, Zeboim (1 Sam. xiii. 18), which signifies 'the valley of hyenas.' I should mention that Houghton is of opinion that the *îyyîm* of Isaiah xiii. 21, is the Hyena. [See FOX.]

The hyena is not rare in Palestine, though in early days it was probably far commoner. Although a useful scavenger, and in parts of Africa, for instance, a necessary one, it is usually regarded with the utmost abhorrence, on account of its predilection for human corpses, in search of which it will rifle poorly defended graves and devour the bodies. Hence in Palestine the inhabitants trap it and slay it by all means in their power.

The hyena is not feared as a dangerous animal, for although very powerful it will rarely unless wounded or brought to bay attack man, or indeed any healthy animal. Dead, sickly, or maimed creatures are the prey which it hunts out for itself, and in devouring these it effects a completer clearance than jackal or vulture, by means of its powerful jaws, which enable it to chew up and swallow the very largest bones it meets with. In spite of its strength, however, the hyena is undoubtedly an utter coward.

The hyena is seldom seen, being nocturnal in its habits and very shy. In the valley of the Arabah I disturbed a large striped one, and had several shots with a revolver at it as it shambled away with its

extraordinary ungainly gait. Their tracks were commonly seen.

In size the hyena is somewhat larger than a shepherd dog and has a dog-like appearance. Its skin is marked with black vertical bands arranged like barrel-hoops.

Hyenas occupy in some respects a place intermediate between dogs and cats. The skull is cat-like, while the claws not being retractile resemble those of the dog. The hyena family consists of the single genus hyena, which contains three species, *H. striata*, *H. crocata*, and *H. brunnea*. The latter two inhabit Africa south of the Sahara. The first is the Palestine species, which is spread through Northern Africa and Asia, through Asia Minor, Persia and India to the foot of the Himalayas.

### Kite (Heb. אַיָּה *ayyah*).

The 'kite after his kind' is accounted unclean in Lev. xi. 14 and Deut. xiv. 13. The words 'after his kind' lead us to believe the term is used generically. In Job xxviii. 7, the same word is translated 'vulture' in the Authorized Version. The passage in Job, 'There is a path which no fowl knoweth, and which the vulture's eye hath not seen,' implies that the *ayyah* is peculiarly keen-sighted, and this is eminently true of the kite, which seems to ascend to a higher position in the heavens from which to search for its prey than any other hawk. In its flight it sweeps around in wide circles, 'screwing' its way upwards till it becomes a mere speck.

There are two common species of kite in Palestine, the kite or red kite (*Milvus ictinus*), and the black kite (*Milvus migrans*), and two rarer sorts, the Egyptian and the black-winged kites. The first-mentioned species is

said to be the keenest-sighted of all the birds of prey. It is especially common in winter in Palestine, only a few pairs, however, remaining to breed in summer. It was formerly very common in England, but it is now almost extinct, and has become rare all through Europe and North-western Africa. It is not known farther east than Asia Minor.

The kite feeds on mice, reptiles and the smaller birds. It is also very expert in catching fish, darting into the water for them from a great height, like the osprey. Its wings are very long, and the forked tail is conspicuous when the bird flies near. This is the true *glede* of England, and the name is identical with the word glide or glider, alluding to its flight. Canon Tristram, the best authority on Palestine ornithology, tells us that 'in winter it is gregarious on the coast and in Southern Judæa, and is very abundant in the wilderness to the west of the Dead Sea, and in the whole desert and plateaux round Beersheba, hanging about the neighbourhood of the Bedouin camps and their cattle.'

The manner in which the kite 'governs the curve' it sails in by its rudder-like tail has been long observed. Dr. Barton in his poem on the Creation (p. 66), translated by Sylvester, has

> 'The ravening kite, whose train doth well supply
> A rudder's place;'

and Drayton, in 'The Owl,' has the same idea:

> 'The kite his train him guiding in the air
> Prescribes the helm, instructing how to steer.'

LAPWING (Heb. דּוּכִיפַת *dukiphath*).

This bird is enumerated in the 'unclean' list in Lev. xi. 19 and Deut. xiv. 18, which were forbidden by the law of Moses to be eaten by the Israelites.

In all probability the bird intended is the hoopoe (*Upupa epops*), a beautiful bird well known in the south of Europe, but leading a very unclean life. The Septuagint renders it ἔποπα, and the Vulgate *upupa*, both meaning undoubtedly *hoopoe*. For the Hebrew term there have been various derivations, and Bochart gives several meanings, as the *common hen*, the *cock of the woods*, and the *hoopoe*. The Egyptian name of this bird is *kukuphah*, and the Syrian *kikuphah*, both of which are no doubt

HOOPOE. LAPWING.

formed in imitation of the cry of the bird; and the Hebrew one being nearly identical, we may consider the hoopoe is undoubtedly intended, and that the Hebrew word is derived by onomatopœia. In Arabic the name of the hoopoe is *hudhud*, also from its cry.

The hoopoe feeds on insects in dunghills and in watery places, wherever it finds them, resorting alike to desert valleys or marshy spots by the towns. From its predilection, however, for dunghills, which it probes with a long slender beak, it is regarded as a very filthy bird.

It has a tall crest, its plumage is boldly barred with white, and its movements are rather quaint and grotesque than dignified. It is about the size of a thrush.

The hoopoe is very common in Egypt, where it is found throughout the winter. In Palestine it is a summer visitant. It is found throughout Asia, and from Central Europe to Central Africa. It occasionally occurs in the British Islands.

In consequence of its odd manner of strutting and bowing, and of elevating and depressing its crest, its strange cry and affected fashion of walking, its boldly marked appearance, and above all its familiarity with man, the hoopoe has attracted to itself much popular superstition. The Arabs call it the 'doctor,' according to Canon Tristram, believing it to possess marvellous medicinal qualities, and they use its head in all charms and incantations. Amongst the Egyptians it was delineated to represent gratitude, because it is the only dumb animal which repays the early kindness of its parents in their old age by trimming their wings and bringing them food when they are acquiring new plumage. Many other legends have been collected about the hoopoe, which is undoubtedly rightly substituted for the lapwing by the editors of the Revised Version.

LEOPARD (Heb. נָמֵר *namer*; Arab. نمر *nimr*).

The Leopard is mentioned in Scripture in seven passages in the Old Testament and one in the New. The Hebrew word *namer* signifies 'spotted.' In two of the passages (Dan. vii. 6, Rev. xiii. 2) the animal is mentioned merely allegorically, as seen in a vision. In Jer. xiii. 23, we have a reference to the spotted skin,

which has become proverbial, 'Can the Ethiopian change his skin or the leopard his spots?' Its swiftness is referred to by Habakkuk, who compares the onslaught of the Chaldean cavalry to it, 'Their horses also are swifter than leopards' (Hab. i. 5). Its habit of lying in wait for its prey is referred to by Hosea, 'I will be unto them as a lion, as a leopard by the way will I observe them,' where he alludes to the Israelites as a flock of sheep; and Jeremiah refers to the same habit (v. 5, 6). Isaiah makes reference to the leopard's preference for goat flesh, 'the leopard shall lie down with the kid,' the sense being that the kid will receive no injury from his most fearful enemy. In the same passage the wolf is associated with the lamb and the calf with the lion, these being respectively their usual preys.

Several places in Palestine are called after the leopard. Such are 'Nimrah' (Numb. xxxii. 3, 36); 'Nimrim' (Isa. xv. 6, Jer. xlviii. 34), and 'the mountains of the leopard' (Cant. iv. 8). 'Nemeirah' is also a place near the Dead Sea. This latter is probably identical with the 'waters of Nimrim' of Isaiah.

The leopard (*Felis pardus*) of Palestine is now very rare. Canon Tristram saw a fine pair which had been killed on Mount Carmel, and four leopard skins were shown him in a village in Gilead. It is occasionally still found near the Dead Sea, and lurks in the adjoining mountains. In Sinai we several times found its tracks, and on one occasion discovered traces of a recent conflict with some large animal which had evidently been made the prey of a leopard. In the Wady Arabah especially, which is rarely travelled, its footprints were found where watering-places occurred; notably on the east side about fifteen miles from Akabah. The Bedouins have a great

horror of the *nimr* in Sinai, as its favourite food is their goats, which are almost their sole possession.

The leopard extends over all Africa and Southern Asia to the Malay Archipelago. In Northern Palestine another large cat, the cheetah or hunting leopard (*Felis jubata*), is found, but it is very scarce except east of the Jordan. It is more slender and graceful than the leopard, and it is marked with black spots instead of rings, as in the leopard. The Syrian cheetah may be included in the word *namer* of Holy Writ. It is tamed by the inhabitants in some places, and employed in hunting the gazelle. Both these leopards were no doubt formerly tolerably common. The leopard, or panther, obtained its name through an ancient superstition. It was thought to be not the same animal as the panther or pard, but to be a hybrid between it and the lioness, and hence it was called the lion-pard or *leopardus*. On the same principle the giraffe was called the camelopard, as combining the height and something of the shape of the camel with the spots of the leopard.

LEVIATHAN (Heb. לִוְיָתָן *leviathan*).

This word occurs five times in the Bible. Once also it occurs in the marginal reading of Job iii. 8, for 'mourning.' In Ps. civ. 25, 26, 'this great and wide sea wherein are things creeping innumerable, both small and great beasts. There go the ships: there is that leviathan, whom Thou hast made to play therein.' Here the word must refer to some large cetacean or sea-monster, since the 'great and wide sea' is undoubtedly the Mediterranean. Several of these, as the grampus and rorqual, are not uncommon there.

In the remaining passages (Ps. lxxiv. 14, Isa. xxvii. 1, Job iii. 8, xli. 1) the leviathan is undoubtedly the crocodile. The whole of Job xli. is given up to its description, and the poetical grandeur of this chapter is enhanced by the faithfulness of the picture.

The crocodile is also referred to in several other places in the Bible, under the name dragon (Heb. תַּנִּין *tannin*), as I have endeavoured to show in the article under that heading.

There are many closely allied saurian reptiles, such as the ganoids, alligators, and other crocodiles found in the warmer parts of the world. At present the crocodile of Egypt is not found lower down the Nile than Upper Egypt, but it was formerly much more abundant. It still exists, no doubt in limited numbers, in the Zerka or Crocodile river, which rises near Samaria and flows through the Plain of Sharon. Canon Tristram obtained a specimen from this river, and it was captured there in the last century, according to Pococke the traveller. The Arabs are well aware of its existence in this river, and maintain that it steals their kids. Canon Tristram says, 'When I look at my crocodile's head, brought home by myself, and read the long disquisitions written in various languages as to the possibility of the crocodile inhabiting Palestine, I feel that an ounce of fact is worth a ton of theory.'

The crocodile preys chiefly on fish, which it pursues with lightning-like rapidity, but it feeds occasionally on any animal it can seize. It is a most rapacious and dreaded animal. It is frequently above twenty feet long, and the armour with which it is clad is strong enough in most parts to turn a rifle bullet. The eyes have a membrane, the 'nictitating membrane,' such as is

found in birds. The gape of the mouth is enormous. The tail is long, laterally compressed, and very powerful, serving as a weapon of attack as well as a means of propulsion through the water. The legs are short, but very strong.

The crocodile was regarded as sacred by the Egyptians, as it was also one of their most dreaded objects. There is a legend on the banks of the Zerka, mentioned above, that a colony of Egyptians once settled there, and brought to that river some of the young crocodiles which they worshipped, and that it is by this means the crocodile is found in Palestine. It is not likely that the veneration of the Egyptians, founded on fear, would lead them thus to endeavour to domesticate it. The Egyptians say that one blow of its tail will break all the legs of a horse or an ox. When an animal is in the water the crocodile seizes it by diving and snapping it from below, but if it is on a bank or a little out of reach, it will endeavour to knock it into the water with its tail.

### Lice (Heb. כִּנִּים *kinnim*).

This word occurs only with reference to the third great plague of Egypt (Exod. viii. 16–18, Ps. cv. 31).

Much has been written to endeavour to prove that the 'gnat' should here be meant, but there appears to be no sufficient reason to depart from the rendering of the text, which is supported by the Rabbinical writers as well as Josephus and Bochart.

Moreover gnats rise from watery places, and not out of the dust of the earth, as the loathsome insects in question may perhaps be said to do. These vermin are intolerably abundant amongst the Arabs in Sinai and

Palestine. It is wise for a traveller never to allow either muleteer or camel-driver, on any pretence, to use his saddle or camel-bags. The habits of the Bedouins are dirty in the extreme.

Sir Samuel Baker suggests 'ticks,' a species of which, he states, sometimes infests dry desert places, so that the ground is alive with them. These insects attach themselves to human beings or other animals, and become an intolerable plague, being very difficult to remove. There is, however, no authority to support his suggestion, which would deprive the infliction of a portion of its severity in one respect. The Egyptians are by no means so indifferent to vermin as the Arabs, and especially their priests were regarded as incapable of such pollution, and unfit to perform their ministrations unless scrupulously clean. Every third day, Herodotus tells us, they shaved their heads and persons, lest they should harbour any lice, and so be unfit to administer their rites. Hence such a visitation may be regarded as something worse than a loathsome plague. It interfered directly with the performance of their ceremonial worship.

## Lion.

The Lion is mentioned about 130 times in Scripture, more frequently than any other beast, excepting domesticated animals. There are several terms used in the Hebrew. The commonest is אֲרִי *aryeh*, which denotes the full-grown animal, with no regard to sex (Gen. xlix. 9, Judg. xiv. 5, 8, &c.). כְּפִיר *kephir*, 'a young lion,' sometimes in Proverbs simply 'lion' (Judg. xiv. 5, Job iv. 10, Ezek. xix. 2, &c.). לָבִיא *labi*, or לְבִיָּא *lebiyya*, an 'old lion,' properly a 'lioness,' connected with the Coptic

*labai*, which has the same meaning (Gen. xlix. 9, Numb. xxiii. 24, Job iv. 11, &c.). לַיִשׁ *laish*, a poetic name of the lion (Job iv. 11, Prov. xxx. 30, Isa. xxx. 6, &c.) This latter word has given names to some places, as 'Laish,' the old name of Northern Dan; Beth-lebaoth, 'the house of lionesses' (Josh. xv. 32, xix. 6), and Arieh (2 Kings xv. 25).

The lion is no longer an inhabitant of Palestine. Within the historical period its range has become much

THE LION.

circumscribed. Till a comparatively recent period, down to the times of Herodotus and Xenophon, the lion was well known in Syria and in Greece and in many parts of Asia Minor, as well as in Egypt, from which it has also disappeared. In Asia generally, except in some countries between India and Persia and parts of Arabia, it is now scarce. In Africa alone the lion is undisturbed over a vast area.

No doubt much of this western extirpation of the lion

was effected during the Greek and more especially the Roman dominions. A great demand for these animals for the arena had to be met, and the gradual spread of civilization in aftertimes narrowed still further their limits. In Mesopotamia they still abound, according to Layard, and at all times in that country they afforded sport to the kings of Nineveh. Sculpture and history both point to their love for the chase of the lion. Semiramis and Ninus gloried in it, as they did in warfare and victory over their enemies.

In the Holy Land the lion must have been formerly common, judging from the familiarity and frequency with which it is mentioned, as well as from actual reference to its places of abode, both in the names of places and in various passages: 'He shall come up like a lion from the swelling of the Jordan' (Jer. xlix. 19), the meaning being that in time of floods his lair would be uninhabitable; and again, 'A voice of the roaring of young lions; for the pride of Jordan (the cane-brake) is spoiled' (Zech. xi. 3).

Amongst the occurrences of lions in the Bible, one of the first is that of Samson, when he went down to Timnath with his father and mother, 'and, behold, a young lion roared against him. And the Spirit of the Lord came mightily upon him, and he rent him as he would have rent a kid, and he had nothing in his hand.' Later, we have David's encounter, when keeping his father's sheep, and a lion took a lamb from the flock, and 'he caught him by his beard and smote him and slew him' (1 Sam. xvii. 34–36). In 2 Sam. xxiii. 20 we have the record of another lion-slayer, Benaiah the son of Jehoiada, one of David's mighty men, who had slain 'two lion-like men of Moab; he went down

also and slew a lion in the midst of a pit in time of snow.' This was a valorous feat, to descend into the pitfall where the lion was captured and to slay him single-handed. Usually the captured animals were despatched with spears.

Pitfalls, as means of capturing lions, are mentioned elsewhere, as in Ezekiel, 'He was taken in their pit . . . and the nation spread a net over him.' Spikes were driven into the bottom of these pits. The net alludes to another method of taking the lion, by driving him from his dwelling-place into a wall of net, which is placed partly around it; such a means of hunting the lion is still employed in India. Sometimes the net and pit were combined, when it was desired to catch the animal alive. Allusions to both these methods are numerous (Job xix. 6, Ezek. xix. &c.)

During the period of Babylonish captivity, lions appear to have multiplied in Palestine. Those who were sent by the king of Assyria to re-people the deserted cities complained to their monarch that the ravages of this animal had increased to a fearful extent.

Lions are stated to have lingered in Palestine till about the time of the Crusades. They are mentioned by a historian of the twelfth century as occurring at Samaria. Their bones have been found in the gravel of the Jordan. With the extermination of the forests of Western Palestine the lions also disappeared.

A lion's courage in attacking man, like that of other wild beasts, varies with its hunger. Old lions which have become feeble and deficient in teeth will come to villages for food, and will steal goats, horses, and at length human beings. Thus they acquire a love for human flesh, but the 'man-eaters' appear

to be invariably those which are unable to seek their food in the ordinary manner, and not, as some suppose, the more daring ones who fear not to attack mankind. The natural death of a lion is from hunger, his strength and endurance being insufficient to provide for himself necessary food. Hence we read, 'The old lion perisheth for lack of prey' (Job iv. 11).

Lions have been long kept in confinement by various nations. The Egyptians kept them for hunting. The Romans used them for public combats in the arena, and to gratify a vitiated taste in witnessing their destruction of criminals. Amongst Easterns they were kept chiefly for display, and because they were regarded as symbols of royalty. Sometimes too they were used, as in the case of Daniel, as instruments of punishment; but the occasion was not to have been made part of a festival, on the contrary, the agonies of the sufferer were no doubt intended to have been concealed from view.

Lions were held to be the type of the highest courage. Amongst David's best warriors were the 'lion-faced' men of Gad (1 Chron. xii. 8). The lion was the emblem of the princely tribe of Judah; nevertheless, on account of its ferocity the lion is employed as a metaphor for cruelty and malignant animosity (Ps. vii. 2, xxii. 21, &c., 2 Tim. iv. 17), and hence for Satan himself (1 Pet. v. 8). Its fierceness, courage, and strength are continually alluded to (Judg. xiv. 18, 2 Sam. xvii. 10, Numb. xxiv. 4).

The lion's roar has been often described. Gordon Cumming refers to it as being 'extremely grand and peculiarly striking. It consists at times of a low, deep moaning, ending in faintly audible sighs. At other times he startles the forest with loud, deep-toned, solemn roars, repeated

five or six times in quick succession, each increasing in loudness to the third or fourth, when his voice dies away in five or six low, muffled sounds, very much resembling distant thunder.' In Amos iii. 4, the prophet draws a fine comparison, 'The lion hath roared; who will not fear? The Lord God hath spoken; who can but prophesy?'

LIZARD (Heb. לְטָאָה *letaah*).

The Lizard is included amongst the unclean things that creep upon the earth in Lev. xi. 30.

Lizards are very abundant in Palestine. Upwards of forty species have been enumerated, and some of these are extremely common. No doubt more remain to be discovered. The families *Amphisbaenidae*, *Monitoridae*, *Lacertidae*, *Zonuridae*, *Gymnophthalmidae*, *Scincidae*, *Ophiomoridae*, *Sepidae*, *Geckonidae*, *Agamidae*, and *Chamaeleonidae* are all represented. The chameleon, monitor, and the geckos have been already spoken of. The term used here is no doubt in a general sense, and intended to include them all. The word is accepted by the Jewish Bible in the present rendering, but with the mark of doubt, and there is no occasion to deal with the difficulties that have been raised.

Amongst the most abundant of the Palestine species is the green lizard and its varieties, especially *L. viridis* and *L. agilis*, the former being abundant everywhere in the warm parts of South Europe. In Southern Palestine, even in mid-winter, some species may be found on the alert in the desert south of the Ghor; most of them remain dormant in holes in winter. Lizards are of great variety in size, but those popularly spoken of as such are the smaller sorts. None of them are poisonous,

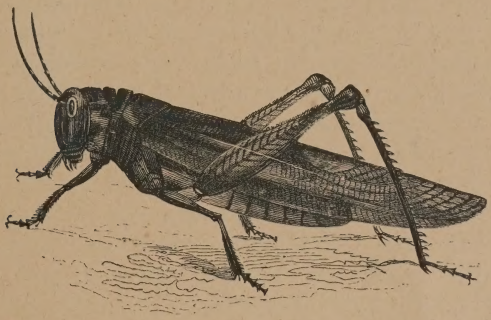
although the Arabs regard them all with great suspicion. Most of them are insectivorous, but a few feed upon vegetable matter. Their teeth are strong and sharp, which is very necessary, as many of them meet with hard coverings to break through amongst beetles and other insect food. One of the commonest genera of lizards in Palestine is *Zootoca*, the wall-lizard, which is closely allied to the lacerta or true lizard. In dry, warm places these animals swarm on rocks and walls. Our English lizards belong to this genus. They are lively and make pleasant pets, but are very susceptible to cold. They are used for food, it is stated, by the poorest class of Bedouins, but all good Mahometans regard the whole group with loathing.

Amongst lizards may be considered also the 'snail' in the same passage, which is no doubt a mistaken rendering; 'And the ferret, and the chameleon, and the lizard, and the snail, and the mole.' The word so translated is חֹמֶט *chomet*. Most of the versions render it as some sort of lizard, and not the 'snail,' which is elsewhere given as the translation of another Hebrew word. The word *chometon* signifies sand, and it has been hence argued that the word signifies the sand-lizard, under which name are included the Skinks and the genus *Seps*. Several of these are very common, and the rapidity with which they can burrow into the sand to escape capture is most surprising. It is very difficult to catch them. Handfuls of sand thrown in front of them about their heads seem, however, to completely bewilder them in their flight, and thus specimens may be secured. These lizards are admirably suited to their place of abode. At a little distance it is impossible to distinguish them from the sand, and were it not for

their movements they would rarely attract attention. In Sinai they are extremely plentiful, as are also some of the *Agamidae*, a sort of rock-lizard.

### Locust.

Locusts belong to the *Orthoptera*, an order which includes insects with a biting mouth and an imperfect metamorphosis. True locusts are united with grasshoppers to form the family *Acridiidae*. Other families of the order are crickets (*Gryllidae*), praying insects or soothsayers (*Mantidae*), stick and leaf insects (*Phasmidae*)



THE LOCUST.

cockroaches (*Blattidae*), ear-wigs (*Forficulidae*), white ants (*Termitidae*), and dragon flies (*Libellulidae*).

Of these the crickets, grasshoppers, and locusts form what is called the saltatorial or leaping tribe, in which the hind legs are adapted for leaping, 'having legs above their feet to leap withal,' and the head is large. In most of them the males have the power of emitting loud chirping sounds, the means of effecting which vary in different families.

The food of the locust is exclusively of a vegetable nature. The species which are most destructive in South-eastern Europe and in the East are *Acridium peregrinus*, *Oedipoda migratoria*, and *Oedipoda cinerascens*. Where they occur in unusual abundance, these insects carry utter destruction to vegetation. In the larval condition they travel in search of food, but it is in the adult stage that their wanderings are fully developed. Swarms which obscure the sun at noonday, light on some doomed neighbourhood, and all hope of saving crops, fruit, and vegetables may be abandoned. The leaves are stripped from the trees, and the surface of the earth appears as if it was burned. Thus they have often caused direful famines, and their rotting masses of bodies, especially along the sea-shore, have given rise to pestilential and noisome stenches, rendering districts uninhabitable. There is, in fact, no animal capable of inflicting so much injury to mankind as the locust. Fortunately, the worst visitations are of unfrequent occurrence. Some idea of their extent may be inferred from an African traveller's (Mr. Barrow) description, who states that an area of 2000 square miles was covered with them, and where they met the sea they formed a bank along the shore three or four feet high for fifty miles. Their being driven into the sea by a strong wind is, indeed, the only escape from the plague, as it was amongst the Egyptians. Many accounts of these flights may be found in various places, and perhaps the best is that of the Rev. Mr. Holland given by Canon Tristram, but which is too long for transcription here. The visitation Mr. Holland witnessed was in April, 1865, in Sinai, and the flight lasted three days, many settling on the ground, till every green thing was eaten.

The reports of the methods adopted for freeing Cyprus from this scourge since it passed into the hands of the British Government are full of interest.

Locusts in some places are esteemed a great delicacy. There are various ways of dressing them. Sometimes they are boiled and devilled, sometimes ground and pounded and made into cakes with flour, sometimes they are smoked, or roasted, or fried, or stewed in butter. Amongst the Moorish Arabs they are held in high esteem as a stimulant, and in Central Arabia they are regarded as a dainty. Their taste is by no means unpleasant when roasted and dried.

In Leviticus locusts are permitted as food, and it is well known that they were and are still eaten in the East. Many less gregarious species are always procurable in greater or less quantities, especially in the warmer parts, such as the Jordan Valley, where they are still eaten, as well as in Gilead. There is no necessity to enter into the controversy which has been raised to prove that the locusts eaten by St. John the Baptist in the Judæan wilderness were really the pods of the locust tree, or carob. There can be no doubt that the literal rendering in the Authorized Version is the correct one.

Locusts are mentioned very often in the Bible, and a number of Hebrew words are employed. אַרְבֶּה *arbeh* (signifying 'to multiply') is the commonest name for 'locust,' and occurs about twenty times. It is the word used in the eighth plague of Egypt. In four passages (Judg. vi. 5, vii. 12, Job xxxix. 20, Jer. xlvi. 23) it is translated 'grasshopper.' חָגָב *chagab* is translated 'locust' in 2 Chron. vii. 13, elsewhere it is rendered 'grasshopper.' It is the grasshopper of Lev. xi. 22

mentioned along with *arbeh* (locust), סֶלְעָם *salam* (bald locust), and חַרְגֹּל *chargol* (beetle) as permissible for food. *Salam* does not occur elsewhere, and all we can know of it is that it was probably a species of locust. *Chargol* is clearly wrongly translated 'beetle' in the same passage, as it could not possibly come under that description [see BEETLE]. In Joel i. 4 occur other names, probably for some of the same group. They are mentioned in company with *arbeh*; גָּזָם *gazam* (palmerworm), יֶלֶק *yelek* (cankerworm), and חָסִיל *chasil* (caterpillar). *Chagab* was probably some smaller locust, and hence grasshopper is a good English translation. *Gazam* signifies in its root-meaning 'to cut off,' and in some versions it is rendered caterpillar. It may have been the larval state of the locust. *Yelek* is rendered 'cankerworm' in four out of the six places where it occurs, and in the two remaining caterpillar. The epithet 'rough' is applied in Jer. li. 27. This may also represent the larva of the locust. Two or three other terms are rendered either 'locust' or 'grasshopper,' but nothing certain is known of their real meaning.

The description of the approach of the visitation of locusts is highly poetical in the prophet Joel (ii. 2–7, 9), and in its various particulars full of accurate characteristics.

## MOLE.

Two Hebrew words are so translated in the Bible. תִּנְשֶׁמֶת *tinshemeth*, mentioned in Lev. xi. 30, and probably a species of lizard, has been dealt with already under CHAMELEON. In the other passage where 'mole' occurs it is the translation of the Hebrew combination, חֲפֹר פְּרוֹת *chephor-peroth*, 'In that day a man shall cast

his idols of silver, and his idols of gold, which they made each one for himself to worship, to the moles and to the bats' (Isa. ii. 20). Here the signification is probably general, and refers broadly to the multitudes of burrowing and gnawing animals found in all parts of Palestine, and especially among ruins. Mice, rats, hamsters, sand-rats, gerbilles, jerboas, dormice, squirrels, and voles all occur, and in the southern regions bordering on the desert some of these are amazingly numerous.

There is no true mole in Syria. There is, however, an animal that takes its place in popular language and is called the mole, but it is only similar in its habit of burrowing in subterranean chambers and rarely showing itself at the surface. It is more correctly called the mole-rat (*Spalax typhlus*), and it belongs to the Rodents, whereas the true mole (*Talpa europaea*) belongs to the Insectivora.

The mole-rat lives chiefly on bulbs and roots, and burrows close to the surface wherever it can find them. On the plains of Judæa, from the Dead Sea to Gaza and about Beersheba, we found it very abundant. It is no easy matter to obtain a specimen, but by watching for a few minutes the freshly disturbed surface heaps as the animal works beneath one can soon detect a movement. A shot fired then straight into the earth a little in front of the last moved soil stuns or kills the animal underneath by the concussion, and it may be at once dug out, probably still living. By this means several were procured. The mole-rat is stated to frequent ruins and gardens, but those that we observed were chiefly in the open country. It is about nine inches long, yellowish brown tinged with slatey grey in colour, without any apparent ears, and

hardly any eyes. It has large projecting powerful incisor teeth, which give its face a strange and dangerous expression.

The mole-rat is found in South-eastern Europe generally, and ranges eastwards to the Caucasus. It is particularly abundant in the countries round the Crimea. There are about ten known species in the mole-rat family, eight of which are confined exclusively to Africa.

### Moth (Heb. עָשׁ *ash*).

Almost every mention of the Moth in Scripture has reference to its destructiveness, and there is therefore no doubt that the *Tineidae*, or clothes moths, are referred to. In the Book of Job the insect is quoted as of extreme fragility and easily crushed: 'Behold, He put no trust in His servants, and His angels He charged with folly: how much less in them that dwell in houses of clay, whose foundation is in the dust, which are crushed before the moth!' (iv. 18, 19). Perhaps the simile is rather to the well-known cases of these insects, as in Job xxvii. 18, 'He buildeth his house as a moth.' Other lepidopterous larvæ also roll up fragile cases of leaves.

The destruction of clothing caused by these insects is several times mentioned. 'Behold, the Lord God will help me; who is he that shall condemn me? lo, they all shall wax old as a garment; the moth shall eat them up' (Isa. l. 9).

In the New Testament there are several allusions to the moth. 'Your riches are corrupted, and your garments are moth-eaten' (Jas. v. 2). This metaphor is forcible enough amongst ourselves, but it is probable it was even more so amongst the wealthy in the East,

where clothing was regarded as of more importance, and laid by and treasured in larger stores than in this country. And the substances of expensive robes were in early days more valuable than at present. Gifts of clothing are frequently referred to in the Bible, and are still prevalent amongst Orientals.

There is no mention of any other lepidopterous insect in the Bible. Even the references to silk in the Old Testament are dubious, the only unmistakeable one occurring in Rev. xviii. 11, 12, where it is included amongst the wealth of the typical Babylon; 'The merchandize of gold, and silver, and precious stones, and of pearls, and fine linen, and purple, and silk.' Nevertheless it is most probable that the Hebrews were acquainted with silk at least as early as the times of commercial enterprise and prosperity under Solomon.

Silk is still largely cultivated in Lebanon, and an excellent crop is annually produced. It is chiefly amongst the Druses that this industry is carried on. This is not, however, the place for dwelling upon the history or manufacture of silk. [See WORM.]

MOUSE (Heb. עַכְבָּר *akbar*).

The Mouse is mentioned in three distinct passages in Scripture. In the first of these it is forbidden as food amongst the creeping things that creep upon the earth, 'the weasel and the mouse and the tortoise after his kind.' In 1 Sam. vi. mice and emerods were sent as a plague upon the Philistines, to warn them to send back the ark to the Israelites; 'Then said they, What shall be the trespass offering which we shall return to Him? They answered, Five golden emerods, and five golden mice, according to the number of the lords of the Philistines:

for one plague was on you all, and on your lords. Wherefore ye shall make images of your emerods, and images of your mice that mar the land.'

Again in Isa. lxvi. 17, the eating of the mouse is referred to with horror, 'eating swine's flesh, and the abomination, and the mouse.' There is no lack of mice in Palestine. Our own mouse and rat have been introduced and are common. When tenting near the Dead Sea, a sort of mouse (*Mus bactrianus*) was exceedingly plentiful and familiar; as often as traps were set by night or day individuals were obtained. This animal is there very destructive to the grain of the cultivating Ghawarneh Arabs, who till the land extensively. Another species of house-mouse (*Mus alexandrinus*) is found in the towns along the southern coast.

Although the word 'mouse' is perhaps used generically in Leviticus, it probably refers to the field-mouse (*Cervicola arvalis*) in the visitation that marred the land of the Philistines. This field-mouse, or vole, is very common everywhere in cultivated ground, and were it not kept within limits by the multitudes of birds of prey which feed on it, it would speedily ravage the land. Most of the other small rodents, which are so very numerous from the Dead Sea southwards, are strictly desert species, and not available as interpretations of the passage in Samuel. The jerboas are not found in Palestine except in the desert districts, nor are the several species of sand-rat. The hamster is about the size of a brown rat, and in many parts of Eastern Europe is exceedingly injurious to the agriculturist, not merely consuming vast quantities of grain, but carrying off in their cheek-pouches what they cannot devour, and storing it for winter use. A species of hamster

(*Cricetus auritus*) is common in the cultivated parts of Palestine. The Hebrew word under consideration is, however, rather to be taken as referring to the smaller rodents.

There is another beautiful little group of small mice, which is confined in Palestine to the neighbourhood of the Dead Sea. These are the porcupine mice, of three species, which are also desert animals and occur throughout Sinai. In that region the base of every tamarisk bush or clump of camel grass, the banks of the water-courses, and the sandy plains themselves, are continually riddled with holes In the valley of the Arabah this is a most astonishing feature. From the little holes of sand-wasps and the larger species of ant, the hiding-places of lizards, and the warrens of the countless hosts of jerboas, desert-mice, and sand-rats, there is no cessation; and the marvel is not merely how do they all live, but how do they all keep themselves hidden? For it is but seldom one obtains a glimpse of the species. Traps and small pitfalls, with quiet sojournings, are the only ways to become acquainted with these animals, of which no doubt several sorts are still unknown to science.

## MULE.

In the Authorized Version of the Bible the word 'mule' stands for the following Hebrew words: פֶּרֶד *pered*, פִּרְדָּה *pirdah*, the masculine and feminine common names for the mule. Of these the first occurs very often, the latter only in 1 Kings i. 33, 38, 44. רֶכֶשׁ *rekesh*, in Esth. viii. 14, should be DROMEDARY, which see. יְמִם *yemim* is found only in Gen. xxxvi. 24, where it is rendered 'mules;' 'This was that Anah that found the mules in the wilderness, as he fed the asses of Zibeon

his father.' This is no doubt a mistranslation, since at that period horses were unknown in the Land of Promise. The Vulgate translates the word *Aquae Calidae*, 'hot springs,' which is probably correct. The discovery of 'hot springs' would be a fact worth recording. This reading is accepted by the Revised Version. The editors of the Jewish Bible leave it untranslated, not being satisfied with any rendering.

Mules are not mentioned in the Bible till the time of David, after the introduction of horses. After this they are commonly spoken of, and soon became the ordinary riding animal of persons of rank. In 2 Sam. xiii. 29, the word *pered* first occurs, 'And the servants of Absalom did unto Amnon as Absalom had commanded. Then all the king's sons arose, and every man gat him up upon his mule, and fled.' And in 1 Kings i. 33, David orders that Solomon his son shall be brought down to Gihon upon the king's own mule, when he was anointed by Zadok and proclaimed as king. Thus the mule was the animal of state. Solomon probably imported his mules from Egypt, since there is an express injunction against the breeding of mules contained in Lev. xix. 19, and it is therefore unlikely that they were bred in Palestine. On their return from Babylon the Israelites brought with them 245 mules (Ezra ii. 66).

In Isaiah's time (lxvi. 20) we read that mules were commonly employed for riding by persons of high position, and they are spoken of as part of Ahab's royal stud (1 Kings xviii. 5).

The Phenicians obtained their mules from Togarmah (Armenia), (Ezek. xxvii. 14,) at the fairs of Tyre.

Mules were also used occasionally as beasts of burden. A 'mule's burden of earth' is spoken of in 2 Kings v. 17.

Mules are much used in Syria, and being hardier and longer-lived than horses, command sometimes a higher price. Owing to their sure-footedness they are invaluable as beasts of burden in rough, hilly districts. They are never used by the Bedouins, but chiefly by the mercantile classes in the towns as riding animals. The Bedouins and the soldiers in Syria ride upon horses, as do also those that visit the country for travel.

Mules are nowhere mentioned in the New Testament.

Mules appear to have been first bred in Armenia and Paphlagonia. They are frequently mentioned by Homer.

NIGHT HAWK (Heb. תַּחְמָס *tachmas*).

The Night Hawk occurs only in the list of birds forbidden for food in Lev. xi. 16 and Deut. xiv. 15.

The word *tachmas* is derived from a root signifying 'to tear or scratch the face.' From the context it may have been a bird of prey, and it is probable that a kind of owl was meant. The older versions give this meaning to the term, while the Jewish writers leave it indefinitely as some kind of rapacious bird. It is quite hopeless even to conjecture which species of owl, if it be an owl, was intended. There are five common sorts of owl in Palestine. [See OWL.]

'Night hawk' is a synonym in many parts of England for the night-jar or goat-sucker (*Caprimulgus europaeus*), and was probably the bird that was intended by the Authorized Version. It is a summer migrant to Palestine, but by no means abundant, and certainly not likely to be spoken for or against as an article of food, since it is rarely seen and very difficult to obtain, on account of its nocturnal habits.

The goat-sucker is, it is hardly necessary to observe, no true hawk, but belongs to the family *Caprimulgidae* of the passerine birds. Their habits are all nocturnal, and their beaks are usually very wide-gaped, and armed with strong bristle-like processes, enabling them to capture and retain, by means of a glutinous saliva, night-flying moths and insects of large size. Most of them are rather crepuscular than nocturnal in their habits, living either alone or in pairs. They have usually singular voices, and that of our own species has given rise to many superstitions. Its sound is loud and somewhat like the reeling noise of a spinning wheel. A Jamaica bird of this family is known there as the night hawk, and the American whip-poor-will is also a goat-sucker. Like our own species, the latter bird was formerly regarded with superstitious dread as an omen of death or misfortune where its notes were heard.

*Tachmas* has been also identified with *Strix flammea*, the white owl, barn owl, or screech owl of England, by some writers. It is not very common in Palestine, but its note is frequently heard, and it is well known to the natives.

ONYX. See SNAIL.

OSPREY (Heb. עָזְנִיָּה *azniyyah*).

The Osprey occurs only in the list of forbidden birds in Lev. xi. 13, and in the parallel passage in Deut. xiv. 12. The Hebrew word so translated is *azniyyah*. It is probably a collective term for the lesser eagles, and would no doubt include the osprey (*Pandion haliaëtus*). This is not a common species in Palestine, and is chiefly found in the north. Elsewhere it is almost cosmopo-

litan in its range, and is met with in the British Islands, chiefly in the lake district of England.

The osprey feeds upon fish, and especially resorts to the shores of the Bay of Acre and the streams flowing into it, and it has been observed in the marshes of Huleh under Hermon. The osprey has a wonderful skill in flight, enabling it to poise itself steadily and accurately in one place, even in a breeze of wind. Formerly it was supposed that in this position it so petrified the fish with terror, or some other influence, that they were unable to escape ; and further, on account of the difficulty of conceiving how a bird could hold a slippery fish, the osprey was believed to have one leg armed with a claw and spread open, while the other foot was webbed and fit for swimming.

Another eagle, very much the size and appearance of the osprey, may be included under this term. This is the short-toed eagle (*Circaëtus gallicus*), which is the most abundant eagle in Palestine. [See EAGLE.]

OSSIFRAGE. See EAGLE.

OSTRICH.

The Hebrew word בַּת הַיַּעֲנָה *bath-hayyanah* or יַעֲנָה *yaanah*, which means 'vociferation' or 'the daughter of vociferation' (according to some, 'greediness'), is the usual word for ostrich in the Bible. This word is so translated in Lam. iv. 3, 'The daughter of my people is become cruel, like ostriches in the wilderness.' Elsewhere the word is rendered erroneously 'owl.' Under this mistaken translation 'owl,' the ostrich is included amongst unclean birds in Lev. xi. 16, Deut. xiv. 15 ; and

it is also found in Job xxx. 29, 'I am a brother to dragons, and a companion to owls;' in Isa. xxxiv. 13, 'An habitation of dragons and a court for owls,' and in a similar context in xliii. 20. In each of these passages

THE OSTRICH.

the correct reading 'ostriches' is given in the margin. The ostrich, the true bird of the desert, is undoubtedly the proper interpretation. So also in Mic. i. 8, Jer. l. 39, Isa. xiii. 21, 'owls' should be rendered 'ostriches,'

Another word רָנָּן *ranan,* which is rendered peacock in Job xxxix. 13, should also be translated 'ostrich'; in the same verse the word נוֹצָה *notsah,* which is rendered 'ostrich,' is the Hebrew for 'feathers.' Peacocks were not known in Palestine or Syria till the time of Solomon [see PEACOCK], whereas the ostrich was no doubt a familiar bird to the patriarch Job. There is another Hebrew word in use for the 'peacock.'

The cry of the ostrich, which is probably referred to in its Hebrew name, is described as being a loud mournful kind of bellowing roar, very like that of the lion, and also uttered at night.

The habits of the ostrich find several illustrations at the hand of Job in the chapter already quoted from. The difficult passage at the commencement is thus rendered by the Revised Version: 'The wing of the ostrich rejoiceth; but are her pinions and feathers kindly [or as the stork's]? which leaveth her eggs in the earth, and warmeth them in dust, and forgetteth that the foot may crush them, or that the wild beast may break them. She is hardened against her young ones, as though they were not hers: her labour is in vain without fear; because God hath deprived her of wisdom, neither hath He imparted to her understanding. What time she lifteth up herself on high, she scorneth the horse and his rider.' In the Lamentations of Jeremiah also the cruelty of the ostrich to its young is referred to, 'Even the sea monsters draw out the breast, they give suck to their young ones: the daughter of my people is become cruel, like the ostriches in the wilderness' (iv. 3).

In the above passage from Job the speed of the ostrich, the beauty of its plumes, and its reputed habit of leaving its eggs to be hatched in the sand by the sun,

are all referred to. Its stupidity is perhaps more fancied than real, but there is reason for the Arab proverb, 'as stupid as an ostrich,' amongst those who observe the variety of indigestible and useless things which they swallow[1]. The childish and amusing story of its hiding its head in the sand, in the belief that it is then invisible, is somewhat severely strictured by Canon Tristram as an 'undeserved calumny.' It is not likely that such a fiction was ever seriously credited.

The mature male ostrich has a brilliantly contrasted plumage of black and white. The valuable plumes of the wings and tail are of the purest white. These latter are in as much demand amongst the Arabs for their own wants in the decoration of tents and spears of the sheikhs, as they are for the markets westwards. The great outlets from Syria for these plumes are Smyrna and Aleppo, where the bazaars always contain a good supply.

The speed of the ostrich has been estimated by Livingstone at twenty-six miles an hour, but for a short space it can probably go even faster. Its stride reaches twenty-two to twenty-eight feet, according to Canon Tristram.

It was always, and still is amongst the Orientals, the belief that ostriches left their eggs to be hatched by the heat of the sun. The ostrich is a polygamous bird, each cock associating with three or four hens, for whom they fight vigorously, and all of which lay their eggs in one large nest scooped out in the sand. The male takes his turn at sitting on them as well as the females. One commentator gravely states that the ostrich was too large and heavy to sit on her eggs, 'she therefore hides them

[1] An ostrich died in the Zoological Gardens from swallowing 9½*d.* worth of copper money.

in the sand, watches them, and hatches them as it were with her eye.'

Many more eggs than those in the nest are dropped in the neighbourhood, and no doubt thus arose the popular belief. These extra eggs are, according to Layard, broken by the parents when the young are hatched, and serve for their first meals.

Ostriches have been long regarded as of much value, owing to their beautiful plumes, but it is only recently that the domestication of ostriches in 'ostrich farms' has developed this product into an industry of first-class importance. In South Africa and Australia many thousand pounds' worth of feathers are thus annually raised, and not the least benefit of this trade arises from the fact that it is unnecessary to kill the birds to obtain the plumes.

Ostriches formerly extended to India and Central Asia, but do not now inhabit those countries. They have been known from time immemorial in Syria, Arabia, and Mesopotamia, and the feather ornaments appear in the oldest sculptures of those countries. They are rapidly diminishing in Western Asia, but are still frequently, if not annually, obtained near Damascus. Canon Tristram obtained a specimen in the Belka, on the south-eastern confines of Palestine, which had wandered from Arabia, and was shot by an Arab sheikh. In Egypt and Nubia the ostrich seldom occurs, rarely north of 17° latitude. In the beginning of this century Buckhardt saw many between Cairo and Suez, but they appear to have abandoned the Libyan Desert. They are found throughout Africa from Algeria to Cape Colony, wherever there is country open enough, and they have not been exterminated.

Ostrich feathers were used by the Greeks as early as B.C. 425 for decorating helmets, and the noble Roman ladies are said to have kept tame ostriches for riding. The Egyptian queen Arsinoe had a statue, on which she was represented riding an ostrich. Ostriches may be seen driven in harness in the Jardin des Plantes attached to a light car. The bird is guided by a hooked stick applied to his neck. The pace, it must be confessed, is nothing remarkable in the way of speed.

The ostrich (*Struthio camelus*) belongs to an order of birds (*Struthionidae*) now mainly extinct, which forms a separate division of the whole class. They are characterized by the absence of a keel to the sternum.

## Owl.

Several Hebrew words are rendered 'owl.' We have already shown that the word 'owl,' as the translation of *bath-hayyanah*, in eight passages in the Bible, should be 'ostrich.' [See OSTRICH.]

The Hebrew word יַנְשׁוּף *yanshuph* is translated 'great owl' in Lev. xi. 17 and Deut. xiv. 16, amongst the list of unclean birds. In Isa. xxxiv. 11, where the prophet is describing the desolation of Edom, this word is translated owl; 'The owl also and the raven shall dwell in it: and he shall stretch out upon it the line of confusion and the stones of emptiness.' The name seems to be derived from a Hebrew word signifying 'twilight,' so that it is probable a nocturnal bird is meant; and the translation 'owl,' as being a lover of ruins and nocturnal in its habits, is generally accepted as correct. The ibis, the reading of the Septuagint and Vulgate, is quite unacceptable, since it is a bird of reeds, marshes, and

swamps, and out of the question with regard to the rock-hewn Petra, the ancient capital of Edom.

The great owl of Palestine is the Egyptian eagle owl (*Bubo ascalaphus*). It is the commonest species except the 'boomey' or little owl. It is very abundant about ruins in Egypt, and is also common at Petra. It occurs in ruins throughout Palestine, and has a loud prolonged hooting cry, very suitable in its dreary sound to the desolate places it inhabits. Where there are no ruins, as in the wilderness of Southern Judæa about Bir es Seba, it resorts to burrows for a nesting-place. It is a large bird, nearly two feet long, with the head decorated with long ear-tufts or horns. The Egyptian eagle owl is almost confined to Egypt and Palestine.

The Hebrew word כּוֹס *kos* is the name of an unclean bird (Lev. xi. 17, Deut. xiv. 16), and it occurs again in Ps. cii. 6, 'I am like an owl in the desert' (Heb. or 'ruined places'). In the list of unclean birds it is translated 'little owl.' Most of the old versions agree that *kos* should be so translated.

The little owl of Palestine (*Athene glaux*) is one of the birds most universally met with in Palestine. It is known by the name *boomeh* amongst the Arabs, and is a great favourite with them, being regarded as a lucky species and one friendly to man. It is also called the 'mother of ruins,' and neither ruin nor tomb of pretension will easily be found without one. Around the villages and in the olive gardens it is always to be met with, and as regularly as the sun sets its musical melancholy note is almost sure to be heard, no matter where the traveller pitches his tent. As it cries it bows and sways itself in a most grotesquely weird fashion, and as it is quite

tame, it admits of a close study of its amusing ways.

This is the bird selected by the Greeks of ancient Athens as the emblem of wisdom and the symbol of their city. It is represented on their coins, and derives its name 'Athene' in this way. It is closely allied to the little owl of Europe (*Athene noctua*), but is smaller and of a paler colour. It has not been found north of the Mediterranean, and only in Syria, North Africa, Persia, and Afghanistan.

Another Hebrew word קִפּוֹז *kippoz* occurs only once, in Isa. xxxiv. 15, where it is translated 'great owl,' but this bird has already been identified with the *yanshuph*. It is probable that an owl is meant, and Canon Tristram suggests the Scops owl (*Scops giu*), fancying its note to be represented by the name *kippoz*. It is the *maroof* of the Arabs, and is very abundant as a summer visitor to Palestine. Like the rest of the family, it frequents ruins and olive groves. It is a very small species, about seven inches long. The identification of these owls is the merest conjecture, and in this particular case there has been nothing approaching to consent amongst the commentators. *Kippoz* has been translated 'hedgehog,' 'darting serpent,' 'thrush,' 'arrow-snake,' as well as 'great owl,' by various Hebraists.

Yet one more term remains to be considered. לִילִית? *lilith* occurs only in Isa. xxxiv. 14, where it is rendered 'screech owl.' 'The screech owl [marginal reading, 'night monster'] also shall rest there, and find for herself a place of rest.' According to the Rabbins, *lilith* was a beautiful nocturnal spectral woman that fed upon children,—a sort of Jewish Lamia. If, however, we come to the conclusion that a real animal is intended, the

screech owl of Palestine (*Smyrnium aluco*) may well be supposed to be the *lilith*. *Smyrnium aluco* is the well-known tawny or hooting owl of England, which is not uncommon in Egypt and Palestine. It is a large species, seventeen inches in length, and the most strictly nocturnal of all the owls. It is found throughout Europe, North Africa, Syria, and Asia Minor.

The owl which is properly termed the screech owl is the white owl (*Strix flammea*), and not the tawny owl. [See NIGHT HAWK.] On this account it would perhaps have been simpler to affix the interpretation of *lilith* (screech owl) to *Strix flammea*, and of *tachmas* (night hawk), if it be an owl, to *Smyrnium aluco*. But I have followed Canon Tristram, in order to avoid increasing confusion. Canon Tristram applies the term 'screech owl' to the tawny owl.

PARTRIDGE (Heb. קֹרֵא *kore*).

This bird is mentioned in 1 Sam. xxvi. 20, 'as when one doth hunt a partridge in the mountains;' and again in Jer. xvii. 11, 'as a partridge sitteth on eggs, and hatcheth them not' [marginal reading, 'gathereth young which she hath not brought forth']. This is the translation of most of the old versions.

There are two kinds of partridge in Palestine, both of which are distinct from our English partridge. These are the chukor partridge (*Caccabis chukar*) and Hey's sand partridge (*Amnoperdix Heyi*). The first of these is a large species closely allied to the Greek partridge, but larger and approaching the pheasant in size. It is a very plentiful bird in all parts of the Holy Land, except the desert regions in the south. In autumn they form themselves into large coveys, in winter they

are more scattered. They are found everywhere, even where there is no protection, and form an excellent game bird, being put to the wing with difficulty, extremely adroit in concealing themselves, and very fair eating. The chukor partridge is found across the Asiatic continent from Asia Minor and Syria to the flanks of the Himalayas, and thence to Northern China. In Europe it occurs only in the Greek islands.

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The other true partridge of Palestine is the Hey's sand partridge, which takes the place of the chukor in the warmer dry parts of South Palestine or in the wadies round the Dead Sea. It is the partridge *par excellence* of Sinai, and is very common along the Wady Arabah. It is a beautifully mottled little bird, and very difficult to distinguish from the stones and sand on which it sits

at a few yards' distance, till its eye is caught by the intruder's, when it at once takes flight. It soon lights again, however, trusting far more to escape by its wonderful activity in running than by means of its wings. Thus these birds would readily lend themselves to that method of hunting with sticks already spoken of. [See FOWLS.] The passage in 1 Samuel probably relates therefore to this species, which is plentiful in the neighbourhood of the Cave of Adullam, if this place, 'the refuge of David,' is to be identified with Khûrcitûn, near the Dead Sea on the way from Bethlehem.

This partridge is confined to the Sinaitic Peninsula, the southern parts of Palestine round the Dead Sea, and perhaps Nubia and Abyssinia. I found them also on the northern part of the Midianitish shores of the Gulf of Akabah, and have no doubt they extend south along that coast abreast of Sinai. Probably they occur in Arabia.

Other closely allied birds which might loosely be included under the name of partridge are the sand grouse (*Pterocles*), of which there are three species more or less common in the southern and eastern desert regions, and the francolin, which is not unfrequent in the swampy parts along the coast.

The passage in Jeremiah has led to many surmises and ingenious interpretations. If it is true, as stated that the ancient Orientals believed the partridge was in the habit of stealing eggs and hatching them, and that when the young were hatched they forsook their false parent, we might be satisfied with the marginal reading. Another meaning, and a better one, is taken from the fact that partridge eggs are assiduously collected for food by the Arabs, and hence that he who collects wealth

unjustly will have as little enjoyment and satisfaction out of it as a partridge who has laid a brood of eggs and commenced to sit on them, but is deprived of her hopes by her nest being robbed.

PEACOCK (Heb. תֻּכִּיִּים *tukkiyyim*).

The Peacock is twice mentioned in the Bible; once in 1 Kings x. 22, 'For the king had at sea a navy of Tharshish with the navy of Hiram: once in three years came the navy of Tharshish, bringing gold, and silver, ivory, and apes, and peacocks;' and see also the parallel passage in 2 Chron. ix. 21.

In the other passage where 'peacock' occurs, in Job xxxix. 13, it has already been shown that 'ostrich' should be the translation. [See OSTRICH.]

The word *tukkiyyim* is not really a Hebrew word, but of Tamil origin, and still in use as a name for the peacock on the Malabar coast of India and Ceylon, where the peacock is indigenous and abundant. The Tamil word is *tokei*, in which may be recognised *tukeyim*. The Sanskrit *cikkî* is in fact identical with the old Tamulic *togei*. Gesenius cites many authorities in support of this view, which has recently been confirmed on the spot by Sir E. Tennant. [See also IVORY, APE.] Hence it is concluded that Tharshish or Ophir was situated on the coast of Malabar or in Ceylon, or else that costly wares came from there to some intermediate emporium.

It is most likely that Solomon was the first to introduce peacocks to the shores of the Mediterranean. For a long time they remained, however, a rarity. They were costly to obtain, and not easy to keep or propagate in their new home, from which they extended westwards with extreme slowness. At Athens, in the middle of the fifth

century B.C., they were first introduced, and then kept and bred with the greatest difficulty. They made their first appearance on Greek soil probably at Samos at

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about this period, and Samian coins were stamped with their image. They were adopted there as the sacred bird of Juno at that goddess's temple, the Heræum.

It is not improbable that peacocks reached the Italian coast also direct from Ophir by the way of Sicily or Carthage. Towards the end of the second century A.D. peacocks were asserted to be commoner than quails at Rome, and they were then and until the decline of the Roman republic esteemed the choicest luxuries of the table. The period of its first introduction to England is unknown. Their feathers in ancient times were used for decorating the helmets and crests of our kings, and in the reign of King John a fine was paid to him, including a number of peacock crests. Subsequently the peacock formed one of the dishes in the second course of every great feast, and in the days of chivalry the roasted peacock formed a part of the solemn entertainment at which knights registered their vows of enterprise.

The peacock inhabits the whole of India proper. In some parts they are very abundant and almost domesticated. They are venerated by the Hindoos in some districts, and large flocks are kept at their temples.

Peacocks (*Pavonidae*) are a sub-family of the *Phasianidae* or pheasants, a family of the *Gallinae* or game birds.

### Pelican (Heb. קָאַת *kaath*).

The *kaath*, translated 'pelican,' is one of the unclean birds of Lev. xi. 18, Deut. xiv. 17. The psalmist compares his condition to 'a pelican in the wilderness;' and the '*kaath* and the bittern' are introduced as emblems of desolation and ruin upon Edom (Isa. xxxiv. 11) and Nineveh (Zeph. ii. 14). In the two last passages the word 'kaath' is translated 'cormorant' in the text, but the right rendering 'pelican' is given in the margin, as is often the case.

The word *kaath* signifies 'to vomit,' and refers to the pelican's habit of storing quantities of food in the large pouch attached to its lower mandible, for the purpose of feeding its young. This it does by pressing its beak against its breast. From hence arose the fable that the

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pelican opened its breast with its beak and fed its young with its own blood, which seemed to derive support from the red tip at the end of the bill. The 'kind, life-rendering' pelican was made use of in the early

bestiaries as an emblem of the Christian Church feeding its flock, and a type of charity.

The phrase 'pelican of the wilderness' has been cavilled at, as the pelican is a sea-bird. But it is the custom of the pelicans to resort to their fishing-grounds very early in the morning. They then regularly return to their favourite sandbank or inland group of trees before noon from the bay where they have caught their breakfast, with their bags full of fish; and they remain there digesting their food or enjoying a siesta, often perched on the trees, until evening, when they are off for another fishing excursion, returning again at night to their inland retreat. This is the account given by Dr. Brehn of the common pelican of the Nile (*Pelecanus onocrotalus*), and it shows at once that there is no violence done to the habits of the bird in speaking of the pelican of the wilderness. The appearance of the bird when digesting its food, with its head sunk on its shoulders and its bill resting on its breast, is full of dejection.

In order to enable the pelican to carry these heavy loads of fish, its bones are especially light, and the air-cells with which they are permeated large in size and numerous; moreover, the wings are of great expanse and power.

The pelicans are the type of the order *Steganopodes*, which includes also the frigate birds and the tropic birds. The family *Pelecanidae* contains, besides the pelicans, the gannets, the darters, and the cormorants. They differ from other swimming birds in having all the toes united by a web, which joins the hind toe as well as the three front ones. There are about a dozen known species of pelican, none of which are found in

northern climates. Besides the common white pelican, another species, the Dalmatian pelican (*P. crispus*), is also found, but less commonly, on the Syrian coasts. In both species the spread of the wings is over twelve feet.

PIGEON. See DOVE.

PURPLE. See SNAIL.

PYGARG (Heb. דִּישׁוֹן *dishon*).

The Pygarg is the name of an animal mentioned as being clean and permitted for food in Deut. xiv. 4. The Hebrew word *dishon* is rendered πύγαργος by the Septuagint, and the Authorized Version adopts this translation. The word does not occur elsewhere in the Bible. The Greek word implies an animal with a 'white rump,' and is used by Herodotus as the name of some Libyan deer or antelope, and the 'pygarg' of the Greek and Latin writers has been usually identified with the addax (*Antelope addax*) of North Africa, Nubia, and Arabia. It is the same as one of Pliny's animals, the strepsiceros. As is so often the case, conjecture must again come into play. We have no possibility of knowing, in the first place, whether *dishon* is rightly translated 'pygarg,' and secondly, whether pygarg or *dishon* can be identified with the 'addax.' It may be supposed that the term represents any of the large white-tailed antelopes, and by this process of reasoning we arrive at the addax, since of the four antelopes said to be found in Palestine it is the only one left for this signification. The 'roe' is taken for the gazelle, the 'wild bull' for the oryx, and the 'fallow deer' for the bubalus.

The addax antelope belongs to a fairly well marked section distinguished as a group by the name of the oryxes. They are characterized by the possession of horns in both sexes, by the body being peculiarly deep at the shoulder, and by the long tail being cylindrical and bigger at the extremity. The horns of the oryx are curved backwards, those of the nearly allied addax

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being twisted in a corkscrew fashion. Both species are nearly white, with black hair on the throat. The oryx is found in many parts of Africa.

Canon Tristram writes that he has been near enough to identify it by its horns in the Wady Arabah, and

that it is well known to the Bedouins there, from whom, however, I failed to elicit any information on the subject. He also tells us he has been near enough to identify the oryx by the shape of its horns, on the confines of the Holy Land, and further, that they are frequently to be obtained in the bazaars at Damascus. The oryx ranges north of the Addax to Persia and Mesopotamia, as well as in Africa.

The Hebrew תּוֹא *to* or תְּאוֹ *teo* is translated 'wild bull' amongst the clean animals in Deut. xiv. 5; and in Isa. li. 20 we read, 'Thy sons have fainted; they lie at the head of the streets as a wild bull [*to*] in a net.' The animal meant is probably, from the context, one of the bovine or antelope class. It was evidently a wild, untameable beast, and it is possible that the 'oryx' may have been intended. It is said to be found in the Belka and in the Hauran.

QUAIL (Heb. שְׂלָו *selao*).

Quails are mentioned in the Bible only in connection with the miraculous supply of food which they formed for the Israelites upon two occasions in the wilderness. The first of these was in the wilderness of Zin, a few days after they had passed through the Red Sea (Exod. xvi. 13). The second time was at Kibroth Hattaavah, the encampment where the people murmured for flesh, and 'There went forth a wind from the Lord, and brought quails from the sea, and let them fall by the camp, as it were a day's journey on this side, and as it were a day's journey on the other side, round about the camp, and as it were two cubits high upon the face of the earth. And the people stood up all that day and all that night, and all the next day, and they

gathered the quails.' And these supplies are referred to in Ps. lxxviii. 27 and Ps. cv. 40.

The quails are the smallest of the partridge family, and are only found in the Old World. The British species (*Coturnix vulgaris* = *C. dactylisonans*) is a well-known bird, which visits Europe in the summer. It is the only migratory quail. Immense flocks of these birds cross the Mediterranean from Europe to Africa in the autumn, and return again in the spring. They often rest in vast numbers on the intervening islands, and it is said that from this source the Bishops of Capri at one period derived a large portion of their revenue, for the quail was at all times esteemed a great delicacy at table. On the western coasts of Naples a hundred thousand have been taken in a small space in a day. Hence it is highly probable, as Bewick observed, that the quails which supplied the Israelites were driven thither on their northward passage by a south-westerly wind sweeping over Ethiopia and Egypt towards the shores of the Red Sea. Quails, unlike many other birds, fly with the wind, seldom facing it. Their habit of arriving in vast numbers during their migration has been noticed from the earliest times. Pliny states that ships have been sunk in the Mediterranean by them. Aristotle mentions their habit of waiting for a wind. Like other migrants, they usually effect their landing at night.

A few quails remain throughout the winter in Palestine. In March the migratory body returns in vast numbers, and remains to breed in all parts of the country.

The quail is found over the whole of Europe, Asia and Africa, excepting the Arctic regions.

RAVEN (Heb. עֹרֵב *oreb*).

The Raven is pronounced unclean and forbidden for food in Lev. xi. 15 and Deut. xiv. 14. The word raven in each of these cases is coupled with the generalizing expression 'after his kind,' so that we must take raven to include the whole of the crow family of the larger

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sort, of which several species abound in Palestine. Most of these birds feed more or less upon carrion, and would therefore be regarded as unclean.

The raven (and here the term is to be presumed specific) is the first bird mentioned by name in the

Bible. 'And he sent forth a raven, which went forth to and fro, until the waters were dried up from off the earth' (Gen. viii. 7).

In Prov. xxx. 17, 'The eye that mocketh at his father, and despiseth to obey his mother, the ravens of the valley shall pick it out, and the young eagles shall eat it.' This is a well-known custom of the ravens of all countries, as well as of several vultures and other carrion-feeding birds. Scotch and Irish shepherds maintain that the raven invariably first attacks the eyes of young or sickly animals.

In Cant. v. 11 the raven is spoken of, 'his locks are bushy and dark as the raven.' The Hebrew word *oreb* is derived from a root meaning 'black.' This heightens the force of the simile.

In several passages the raven is quoted as illustrating the care with which God watches over His creatures, which, although living as the raven does in desolate places, where there is apparently little or no sustenance, are duly provided with food (Job xxxviii. 41, Ps. cxlvii. 9, Luke xii. 24). In the passage in Job, reference is made perhaps to an old belief about the raven, namely, that when its young are born they are no longer cared for by their parent, 'until he seeth what colour they be of . . . . when he perceiveth his young ones to be penfeather'd and black like himself, then doth he labour by all means to foster and cherish them from thenceforward[1].' It is curious that this superstition has more foundation in fact than many others, and is in a certain sense actually true. The error in it, however, is of vital importance. Ravens, like other birds, rear their young with care, but as soon as they are fully able to leave their nests and cater for

[1] Guillim's *Display of Heraldry*, p. 222.

themselves, the old birds will no longer tolerate their presence in their ancestral home, where no doubt they are well aware there is not room enough for all to live. So that from the island, mountain, or range of cliffs where the young were reared they must go; and a battle takes place between old and young, often continued for a couple of days; as the young return again and again, till they are finally banished to other quarters. I have witnessed this several times, though not in Palestine, during the early summer at about the time the ravens were fully fledged; and no doubt the bird has the same habits there, where food is at least as scarce as in this country.

Other superstitions have attached themselves to these birds. Its croak was ominous, and considered a foreboding of illness and death:

> 'Like as the fatal raven, that in his voice
> Carries the dreadful summons of our death.'
> PEELE, *David and Bathsabe.*

Nay, the raven did more than merely foretell death. He was absolutely the cause of widespread plagues and disorders:

> 'The sad presaging raven, that tolls
> The sick man's passport in his hollow beak
> And in the shadow of the silent night
> Doth shake contagion from her sable wings.'
> MARLOWE, *Jew of Malta.*

And Shakespeare:

> 'As wicked dew as e'er my mother brushed
> With raven's feather from unwholesome fen
> Drop on you both!'—*Tempest* I. 2.

Birds of the raven kind are most abundant in Palestine. Not only are there many species, but the individuals are everywhere numerous. In Sinai there is always a pair of the common raven (*Corvus corax*) in view,

even when no other life, except a speck representing a vulture in the heavens, can be made out. At Petra there are two sorts of raven ; one (*Corvus affinis*), with a clear loud musical note and small in size, ceased not to wake the echoes of that weird and lovely scene. In the Ghor at the south end of the Dead Sea there is an extraordinary abundance of another species, the brown-necked raven (*Corvus umbrinus*), which takes the place, at least in winter, of our rook amongst the cultivated fields of dhurra and maize. It has a curious barking high note, very distinct from other species, and somewhat like the Canadian rook. The Syrian rook (*Corvus agricola*), a local variety of our own species, is not common in Palestine, owing to the scarcity of timber. Our hooded crow (*Corvus cornix*) is another Palestine species, common and resident in Southern and Central Palestine.

The raven is of all passerine birds the most capable of inuring himself to severity of climate, and I have found them breeding in the Arctic regions as far north as latitude 81° 44′. It is considerably the largest European bird of the crow family.

ROE, ROEBUCK (Heb. צְבִי *tsebi*, m. ; צְבִיָּה *tsebiyyah*, f.).

There is no doubt that the Roe of Scripture is the gazelle. Roes were permitted for food (Deut. xii. 15, 22 ; xiv. 5 ; xv. 22). They were provided for the royal table in Solomon's reign (1 Kings iv. 23), with 'harts, fallow deer and fatted fowl.' Their characteristics of swiftness and grace and gentleness are referred to. We meet the phrases 'as light of foot as a wild roe' (2 Sam. ii. 18), and 'as swift as the roes upon the mountains' (1 Chron. xii. 8). And its timidity is referred to, 'It shall be as

the chased roe, and as a sheep that no man taketh up' (Isa. xiii. 14). 'Deliver thyself as a roe from the hand of the hunter, and as a bird from the hand of the fowler' (Prov. vi. 5). Its graceful beauty has been at all times a favourite subject with poetical writers: 'The voice of my beloved! behold, he cometh leaping upon the mountains, skipping upon the hills. My beloved is like a roe or a young hart' (Cant. ii. 8, 9, 17; viii. 14).

The feminine word gave the female name 'Tabitha,' and in Greek 'Dorcas' or 'gazelle' (Acts ix. 36).

There are twenty species of gazelle, very difficult to discriminate. They are all strikingly elegant. They inhabit Africa, Arabia, Persia, India and Central Asia. They are small, slender, and sandy-coloured, with a band of white down the face and a white rump and abdomen. The gazelle of Syria, Egypt and Arabia is the *Gazella dorcas*. In beauty of form it could hardly be surpassed, but the Arabian gazelle is said to be even superior to it in lustrousness of eye. The two species are closely allied, but the latter is larger. The Dorcas gazelle is found from Algeria across Egypt and thence to Syria and Arabia. It is very common in Palestine, especially in the Judæan wilderness and the Arabah. One was killed within a mile of Jerusalem in heavy snow, and brought into the hotel during my sojourn there. Between Beersheba and Gaza herds of gazelle, from twenty to fifty or sixty in number, were frequently seen, and they were less timid than when in twos or threes in the Arabah. When concealed in bushes in other parts of Palestine they admit often of a close approach. The usual method of shooting them is by lying in wait at the watering-place, although in some parts the Bedouins hunt them in a more sportsmanlike fashion with the

greyhound or the falcon, or more often by means of both combined. The gazelle will outstrip the fleetest horse or greyhound in the chase. The falcon, by striking at the animal, serves to distract and terrify it, so that it is easily secured.

SATYR (Heb. שְׂעִירִים *sairim*).

The plural noun, as has been already mentioned [see GOAT], is translated 'satyrs' in two passages, and 'devils' in two other passages in the Bible. Elsewhere it is rendered goat. Its primary sense is 'hairy.' It seems most probable that some half goat-like demons were really intended, the idea of which was derived from the goat-gods of Egypt, half man and half goat. These mythical animals abound in Arabian and Syrian folk-lore, but have no place in a volume on natural history. The word *satyr* is as correct a translation as could have been applied.

SCORPION (Heb. עַקְרַבִּים *akrabbim*).

Scorpions belong to the same class (*Arachnida*) as do the spiders, from which they are at once distinguished by the segmented abdomen. They are the largest and most dreaded members of the class, and they are almost confined to the warmer parts of the earth. A few species are found in Southern Europe, but these are comparatively harmless. The genus *Androctonus* ('man-killer') has a European representative three inches in length, which is the largest found there, and occurs in the Mediterranean regions. But there are others in this genus double that size in Africa, where *Androctonus* is chiefly represented.

In scorpions the tail is terminated by a curved spur, or sting, beneath which are two poison-glands, whose

contents are set free at the stroke of the sting. They hide in dark, cool places, under stones or in ruins during the day, and come out at night in search of their prey. They can run with rapidity. During the cold weather they lie dormant. Their food is chiefly large insects, grubs and spiders, which they seize with their pincer jaws, and at once sting to death with the poison tail, which is elevated over the back of the body as far forward as the head. The sting of the scorpion is very painful, and many remedies are applied in different parts of Africa. One of the strangest is that narrated by Farini from the Kalahari Desert in South Africa. The natives of one tribe there assert that the sting becomes ineffectual when one is stung often enough, and that thus many of them are scorpion-proof. Their remedy for one sting is another. Farini watched a native, who was stung on the foot. He immediately got another scorpion, and placed it beside the first bite, and made it sting him. In a short time he was free from pain. These natives are afraid of no poisonous snake, provided they have with them the means of resorting to a similar method of treatment, i.e. the dried and deadly poison of another, which they rub into the wound. If there is any truth in these statements, they should by all means have the widest circulation. Most sufferers will probably, however, content themselves with the sting of a single scorpion.

Scorpions are very abundant about the Dead Sea, and from that southwards in the Arabah and through the Sinaitic peninsula, 'wherein were fiery serpents, and scorpions, and drought' (Deut. viii. 15). On account of their love for ruins, which afford them cool hiding-places by day, they are associated with desolation in Ezek. ii. 6. In the New Testament their poisonous nature is

several times alluded to: 'tails like unto scorpions, and there were stings in their tails,' and 'as the torment of a scorpion when he striketh a man' (Rev. ix. 10, 5). And see also Luke x. 19.

In 1 Kings xii. 11 and 2 Chron. x. 14 we read, 'My father hath chastised you with whips, but I will chastise you with scorpions;' this is said to refer to a kind of whip used in punishing slaves, which was armed with a hooked metal knob and called a 'scorpion.'

The Hebrew word *akrabbim* (scorpion) has given its name to a place mentioned in Josh. xv. 3, as the southern boundary of Judah, Maaleh Akrabbim, literally The Scorpion's Pass.

SERPENT (Heb. נָחָשׁ *nachash*).

We have already dealt with several of the Hebrew words which denote serpents of some kind or other. [See ADDER, ASP, COCKATRICE, DRAGON.] There remain still to be considered the two words *nachash*, which is the generic name of any serpent, and אֶפְעֶה *epheh*, which is always rendered 'viper.'

The serpent (*nachash*) is first mentioned in Gen. iii. 1, 13, where he is said to be more subtle than all the beasts of the field. In the New Testament the wisdom of the serpent (ὄφις) is alluded to by our Lord in Matt. x. 16, 'Be ye therefore wise as serpents, and harmless as doves.' The venomous properties of the serpent tribe are mentioned in Ps. lviii. 4, 'Their poison is like the poison of a serpent;' and in Prov. xxiii. 32, 'At the last it biteth like a serpent, and stingeth like an adder;' and Deut. xxxii. 24, 'I will also send the poison of serpents upon them.'

The poison appears in some passages to have been held

to reside in their tongues, 'They have sharpened their tongues like a serpent' (Ps. cxl. 3, and see also Job xx. 16). But elsewhere the danger is attributed to the bite, as it should be, as in Prov. xxiii. 32, quoted above, and in Numb. xxi. 9, and elsewhere.

Reference to the habits of serpents of lying hidden is made in several places. This habit is that which renders them so especially dangerous. In Eccles. x. 8, hiding in hedges is spoken of, 'Whoso breaketh an *hedge*, a serpent shall bite him;' and in Amos, holes in the wall are mentioned, 'If a man . . . went into the house, and leaned his hand on the wall, and a serpent bit him' (v. 19).

In Deut. viii. 15 the dwelling-place of serpents is found to be in the desert, where they chiefly abound. The term 'fiery,' used in this passage and in other places, has reference probably to the burning sensation caused by their painful bite.

Serpents have a peculiar mode of progression by which the lateral bendings of the spine cause them to glide onwards, and the free movements of the ribs backwards and forwards are a means by which they lever themselves along the ground; this kind of locomotion is unlike that of any other animal, and will always appear surprising to the intelligent beholder. It was one of the things which was too wonderful for the writer of Proverbs, one of the three things which he knew not, 'The way of a serpent upon a rock' (xxx. 19). These movements are better displayed and look more abnormal on rough surfaces than on smooth ground.

In Isa. lix. 5, 'They hatch cockatrice eggs' shows that the fact of serpents being oviparous was well known. The word *nachash* would be better rendered here as elsewhere 'serpent,' not 'cockatrice.'

The taming and charming of serpents is alluded to in Ps. lviii. 5, Eccles. x. 11, and Jer. viii. 17. [See ASP.]

Of serpents upwards of thirty species have been found in Palestine, and of these several are highly poisonous, but the majority are quite innocuous. The peninsula of Sinai and the Wady Arabah, especially the latter, abound in snakes. Of poisonous species there are the cobra (*Haja haje*), which is rare; two true vipers (*Vipera Euphratica* and *V. amnodytes*), neither of which are common; *Daboia xanthina*, *Cerastes Hasselquistii* and *Echis arenicola* also belong to the viper family, and are poisonous. Several of these have been already dealt with in previous articles. The viper (*epheh*) is mentioned three times in the Old Testament, and the word *epheh* is always so translated. See Job xx. 16, Isa. xxx. 6, lix. 5. In the New Testament 'viper' is the translation of the Greek word ἔχιδνα, which was used for any poisonous serpent in that language. See Matt. iii. 7, xiii. 34, xxiii. 33; Luke iii. 7; Acts xxviii. 3.

In the Sahara the Arabs name a species of poisonous snakes *el ephah*. The 'leffah' has been described by Dr. Shaw, and Canon Tristram identifies it with the poisonous *Echis arenicola*, or sand viper, a small snake about a foot long, common in the sandy regions of North Africa, Arabia, and Syria. Shaw says, 'it is the most malignant of the tribe, and rarely above a foot long.' It is not so dreaded an animal, however, as the cobra or cerastes.

The viper that fastened on St. Paul's hand was probably the Mediterranean species (*Vipera aspis*), which is found in most of the Mediterranean islands. It is not now found in Malta in consequence of timber having been cleared away, and given place to cultivation.

SEA MONSTER. See WHALE.

## SHEEP.

The Sheep is perhaps the most important of all the animals in the Scriptures. It formed the chief portion of the wealth of the patriarchs, and it is not merely as an article of food that its value is to be estimated. The clothing of those days was almost entirely made of wool; cotton, silk and flax being hardly known or quite out of

SYRIAN SHEEP.

reach until a later period. The number of flocks was the chief measure of property. Tillage was, comparatively speaking, but little resorted to in Palestine, and there was only very local or in most places no possession in land. Hence sheep were of primary value; and from its nature the country was, and is still, better adapted to the rearing and feeding of sheep than other domestic animals.

The sheep is the first animal specified by name in the

sacred writings. Abel, himself a shepherd, offered the firstlings of his flock to the Lord (Gen. iv. 4). Abraham was very rich in sheep, and Job at one time had 14,000 amongst his herds. In 2 Kings iii. 4 we read of a Moabitish shepherd-king who gave a tribute of a hundred thousand lambs and a hundred thousand rams ; and this country is still inhabited by owners of vast herds of sheep, the Beni Sakkr sheikhs. Solomon celebrated the dedication of the temple by the sacrifice of 120,000 sheep.

For several reasons the sheep was ordained for a large proportion of the Jewish sacrifices. The lamb was a type of innocence and purity, and the flesh was valuable as food. The male lamb was the usual selection, and in some cases either it or the kid was necessary. The ram alone could be sacrificed in the trespass offering.

Although sheep and lambs were of great value as food, it is not to be supposed that the Jewish lower classes were able to avail themselves of such diet any more than the peasants of other nations. But amongst the wealthy sheep and lambs were largely consumed. Thus in 1 Kings i. 19 we read how Adonijah slew 'oxen and fat cattle and sheep in abundance, and called all the sons of the king and the captain of the host and Abiathar the priest ;' and in Ps. xliv. 11 occurs the phrase 'like sheep appointed for meat.' At Solomon's table a hundred sheep were consumed each day (1 Kings iv. 23). It was, however, chiefly for banquets, feasts, and the fare of princes, that sheep were killed, or else for sacrificial purposes. They were also sometimes paid as tribute, as in the instance above quoted with regard to the king of Moab.

Sheep's wool as clothing is often mentioned, as in the laws and tokens for discerning the leprosy in Lev. xiii. 47, and again in the sumptuary laws in Deut. xxii. 11. And in Prov. xxxi the virtuous woman is depicted as one who 'seeketh wool and flax, and worketh willingly with her hands,' while Job calls a curse upon himself if the poor 'had not been warmed with the fleece of his sheep,' when making a protestation to the Lord of his integrity.

Sheepshearing is alluded to many times in Scripture. Thus we read how 'Jehu met the brethren of Ahaziah at the shearing house,' and how 'he slew them at the pit of the shearing house' (2 Kings x. 12, 14); and in Gen. xxxviii. 12, 'Judah went up unto his sheep shearers;' and in numerous other passages this practice is referred to, as might be expected.

In Job xxx. 1 we read, 'whose fathers I would have disdained to set with the dogs of my flock;' and it does not appear that these animals bore the same honoured position as the sheep dogs of the present day. The reference is a contemptuous one, and the dogs alluded to had no further charge than that of barking, to frighten away and give notice of the approach of jackals, wolves, and other beasts of prey at night. The shepherd's work in driving his sheep to and from the pasture appears to have been entirely performed by himself, and is carried on in precisely the same manner in Palestine to the present day. [See GOAT.] The shepherd precedes his flock, and they follow him, even coming to his call separately by name when he requires them to do so.

Amongst other purposes which the sheep's carcase was put to, was that of supplying the trumpet or musical instrument blown by the priests, which was made from

their horns (Josh. iv. 4). Horns were used besides as vessels: 'Fill thine horn with oil, and go, I will send thee to Jesse the Bethlehemite' (1 Sam. xvi. 1). The untanned skins were probably, as they are still, made into coats by the shepherds. The 'leathern girdle' of John the Baptist was most likely of this nature. In Hebrews also we read how the fathers of old were persecuted, and 'wandered about in sheepskins and goatskins' (xi. 37); the latter skin, however, is the most prominently adopted as leather in the Scriptures. The tabernacle, we are told, was lined with red ram skins (Exod. xxvi. 14).

Shepherds in the East lead a lonely and romantic life. They wander with their flocks far from human habitations, in order to bring them to pasture, and also because it is necessary for them to watch over them by night, to protect them from wild beasts. In a rude circle of stones, a temporary hut, or a cave, they form some place for repose upon a bed of rushes, and with their dogs they 'abide in the field, keeping watch over their flocks by night.' The sheep are usually on these occasions driven into a fold, which is merely a space enclosed with a loose stone wall. Sometimes, where possible, a cave is selected. A doorway is formed in the boundary wall where one exists.

In John x. 1–6 we read much about the shepherd with his sheep, all of which is exemplified by the manner of tending their flocks amongst the Arabs of Palestine at the present day. 'When he putteth forth his own sheep, he goeth before them, and the sheep follow him, for they know his voice.' The sheep will pursue their master and surround him sooner than let him escape from them, such is their trust in him, their natural protector from

the dreaded wolf. Hartley, in his *Researches in the Holy Land*, tells us how a shepherd called his sheep by name, and they ran to him with signs of pleasure, except some few that had not yet learned their names and were regarded as 'wild.' It is necessary that they should be taught, as the wanderers would stray into unfenced fields of corn, and get into trouble in this way, or else get lost.

In Southern France, and no doubt in other Mediterranean countries, sheep follow their shepherd to the sound of a sort of pipe, and they not only know their names and answer them, but when one has been guilty of a fault, such as a trespass into the unfenced crops, he will obey the shepherd's summons, although aware that a blow on the side of the head awaits him as correction.

Amongst other necessities for their careful tending of Eastern flocks which falls on the shepherd is that of supplying them with water. Hence the wells, such as that at Beersheba, are great resorts and centres for pasture. Noontide is the usual hour for watering the sheep, when the shepherd leads them forth; 'The Lord is my Shepherd; I shall not want. He maketh me to lie down in green pastures: He leadeth me beside the still waters' (Ps. xxiii. 1, 2). And in the narrative of Gen. xxix. the pivot of the incident is the rolling away of the stone from the well for Rachel to water her sheep, the stone being placed as a protection against dust and sand. Later on Moses performed the same office for the daughters of Jethro, and poured the water into the troughs for the sheep. And to this day the well is the common meeting-place in the East, where a little social intercourse and courtship can be daily exchanged.

The sheep of Palestine are of two breeds, the common sheep (*Ovis aries*) and the broad-tailed sheep (*Ovis*

*laticaudata*). The latter is principally remarkable for its enormous, heavy, laterally developed tail, which reaches sometimes a weight of from ten to twenty pounds. This breed is found in Tartary, Arabia, Persia, Barbary, and Syria, and it was known both to Herodotus and Aristotle. It is the same as that which is found figured on the ancient Assyrian monuments. The body is white, head and neck dark, and the tip of the tail horny. The tail is very fat, and regarded as a delicacy for cooking purposes by the Arabs. The fat tail was a part of the peace-offering as ordained for the Hebrews (Lev. iii. 9).

The Hebrew terms for sheep are: צֹאן *tson*, a flock of sheep; שֶׂה *seh*, a single sheep or goat; אַיִל *ayil*, a ram; רָכֶל *rakal*, a ewe; כֶּבֶשׂ *kebes*, fem. כִּבְשָׂה *kebesah*, a young sheep of over a year; טָלֶה *taleh*, a sucking lamb; כַּר *kar*, a lamb in the pasture.

It is the opinion of most naturalists that the domestic breeds of sheep are derived from several distinct species. The head-quarters of the genus is in Asia.

### Snail (Heb. שַׁבְלוּל *shablul*).

Two words are translated 'snail' in the Bible. One of these, חֹמֶט *chomet*, has been already dealt with. [See Lizard.] The other term, *shablul*, occurs only in the passage, 'As a snail which melteth, let every one of them pass away' (Ps. lviii. 8).

This metaphor is obviously derived from the slimy track left by the snail as it crawls along, which gives it the appearance of melting and depositing its substance in its wake.

Snails are very abundant both in individuals and species in Palestine. So conspicuous a feature are they

everywhere, often whitening the desert with their bleached shells, as they do in parts of Judæa, that it is singular reference is not oftener made to them. Over two hundred species of shelled molluscs have been gathered in Palestine, and although many of these are inhabitants of fresh water, and others are very minute, nevertheless the prevalence of the enormous genus of Helices or true snails is as well marked in the Holy Land as elsewhere.

The shells of snails are calcareous, and secreted by the animal from the carbonate of lime found in the limestone or chalk, by the wonderful living laboratory given to this race of beings for the purpose. Hence, in a limestone country like that of Palestine, snails are sure to abound, their struggle for life being much greater when the materials for forming and strengthening their shells are difficult to obtain.

The study of land and fresh-water molluscs in any country is always most helpful to a knowledge of the past distribution of its animal life. These animals have little means of transport except over very limited areas, and hence the groups found in particular places are usually highly characteristic and well adapted to their environment. In Palestine, this is especially the case with regard to the shell-fish found in the rivers and lakes, where we find an unexpected number of bivalves and univalves peculiar to the country, chiefly of the genera *Unio* and *Melania*, which gives us much information on the past development of animal life in this region.

The above verse in Ps. lviii. is the only direct mention of any member of the highest order of the invertebrates, the molluscs.

There are, however, two indirect allusions to other shell-fish. The first of these is contained in the passage

where the Lord ordains the perfumes for the tabernacle, 'Take unto thee sweet spices, stacte and onycha and galbanum' (Exod. xxx. 34). Of these, two are known to be vegetable products, but the third, 'onycha,' which is the translation of the Hebrew word שְׁחֶלֶת *shecheleth*, is of a different origin. Elsewhere 'onyx' is the translation of the Hebrew word שֹׁהַם *shoham*, and *shecheleth* does not occur in the Bible in any other place. In Ecclus. xxiv. 5, wisdom is compared to the pleasant odour yielded by 'galbanum, *onyx*, and sweet storax.'

Many of the old versions render this word *onycha*, which is a preferable term, and unlikely to mislead.

Onycha is, in the old versions, used to denote the 'operculum,' or horny covering of the foot, which many univalve shell-fish close the aperture of their shells with, after they have withdrawn inside. It is especially applied to this substance in the Strombus or Wing-shell, a very abundant genus in the Red Sea, whose operculum in some instances yields a powerful smell when burnt. There is no doubt that the 'onyx' of Dioscorides (ii. 10) and Pliny (xxxii. 10) has this signification.

'Onycha' was formerly used in the Pharmacopeia under the name of *Unguis odoratus* or *Blatta byzantina*, as the old writers on Materia Medica called it. The shell is known to the Arabs by the name of *dofr-el-afrit*, or 'devil's claw.' The Rev. J. G. Wood quotes a very interesting corroboration of this view from Parkyn's *Life in Abyssinia*, where the writer speaks of the commerce between Abyssinia and the Red Sea, including the substances 'muslins, marawdi, Surat tobacco, sandal-wood and doofu.' This last article is the operculum or horny substance with which some species of shell-fish are

furnished to protect the mouths of their shells. '*These in some parts of Nubia are used for perfume, being burnt with sandal-wood.*' Possibly *doofu* of the Abyssinians here is identical with Arabic *dofr*.

The 'purple,' Heb. אַרְגָּמָן *argaman*, also claims a few words here. This purple dye is yielded by many shell-fish. A genus of univalve gasteropods is named 'purpura' from its possession of this quality. One species of this genus is the common dog-whelk (*Purpura lapillus*) of our own coasts. Behind its head is a receptacle containing a white fluid, which on exposure to the air and light passes through various shades of yellow, green, and blue to a brilliant purple. This dye is made permanent without any difficulty, and a couple of centuries ago it was made use of in Irish manufactures, but it has ceased to be so employed—superseded no doubt by cheaper and less permanent dyes. Other species on our coasts produce the same dye, as *Murex erinaceus*, *Scalaria communis*, *Ianthina communis*, but in smaller quantities and of inferior hue.

The Greeks and Romans, however, extracted their royal dye from *Murex trunculus* and *Murex brandaris*, species of the Mediterranean, which do not exist on the British coasts. Phenicia was especially celebrated for this manufacture, and Tyrian purple was of world-wide fame. Each shell yielded a single drop of the colouring matter, and it was hence of much value, and used amongst the Jews as an emblematic colour of royalty and high office, as it was amongst the Greeks. Thick layers of crushed *Murex brandaris* are said to be found to this day near Tyre.

The art of procuring this dye is apparently a lost one. Of the colour itself we cannot even be certain, as it is a

disputed point whether the purple of the ancients did not more closely correspond with our scarlet.

SPARROW (Heb. צִפּוֹר *tsippor*). See FOWL.

The word *tsippor* has been already dealt with in most of the passages where it occurs, in which it is translated 'bird' or 'fowl.' In two passages in the Psalms, however,

THE SPARROW.

it is rendered 'sparrow,' and the term appears perhaps to refer to a particular species. Elsewhere it is generic. In Ps. lxxxiv. 3 we read, 'The sparrow hath found an house, and the swallow a nest for herself, where she may lay her young, even Thine altars, O Lord of Hosts, my King, and my God.' Here the metaphor is one of rejoicing; and the Psalmist pours forth his heart in glad and beautiful verse, full of the hope that he too may be permitted to dwell in the house of his God.

In Ps. cii the tone is, on the contrary, one of grievous complaint. The sparrow is selected as the very picture of despair and destitution; 'My heart is smitten, and withereth like grass; so that I forget to eat my bread. By reason of the voice of my groaning my bones cleave to my skin . . . . . I watch, and am as a sparrow alone upon the house top.'

Canon Tristram considers that the latter 'sparrow' may be the 'blue thrush' (*Monticola cyanus*), which is a common and conspicuous bird in Palestine and Southern Europe, solitary in its habits, and fond of sitting on a roof or any conspicuous eminence while uttering a plaintive cry. It is in the order *Passeres*, which includes the true sparrows. Of true sparrows there are several species in Palestine. Our own species (*Passer domesticus*) is very abundant there now, and there can be no reason to object to its being actually the bird alluded to by the Psalmist. It is somewhat more vividly coloured in Palestine, and a little smaller than with us. It breeds in the ruins about the temple at Jerusalem. Other species of sparrow are found in the Jordan Valley, as the marsh sparrow (*P. Hispaniolensis*) and the Moabitish sparrow of Tristram (*P. Moabiticus*).

### Spider.

The Spider is mentioned three times in the Bible. In one of these passages it is the translation of the Hebrew word שְׁמָמִית *semamith*, 'The spider taketh hold with her hands, and is in kings' palaces' (Prov. xxx. 28). It is probable that the word here has reference to the 'gecko,' a species of lizard, already spoken of. [See Ferret.] The word bears some resemblance to the Greek 'sannamaton,' which is given as a name for the

gecko. There is no likelihood of our 'spider' being intended, for it would assuredly have been the spider's web which was mentioned, as is evident from the context; and this insect is not so much to be found in palaces as in humbler dwellings. The Septuagint and the Vulgate both support the view that some kind of lizard is meant.

In the other passages where the spider is mentioned, it is the translation of the Hebrew word עַכָּבִישׁ *akkabish*,

THE GECKO OR SPIDER OF PROVERBS XXX. 28.

'They weave the spider's web; their webs shall not become garments; neither shall they cover themselves with their works' (Isa. lix. 5, 6); and in Job viii. 14, 'So are the paths of all that forget God; and the hypocrite's hope shall perish. Whose hope shall be cut off, and whose trust shall be a spider's web.' In these two passages there is no question about the translation. It is undoubtedly correct.

Spiders are at least as numerous in Palestine as in

other countries. They form the second order (*Araneida*) of the class *Arachnida*, the scorpions, of which we have already spoken, being the first order. They are adapted to very various habits of life, some dwelling on the surface of the ground or burrowing into it, some living amongst trees and branches or suspended in the air, while others are able to have themselves transported through the air by skilfully contrived webs, and a few live under water in peculiarly constructed little habitations of their own. They are more numerous in warm than in temperate climates, but not, on the whole, of increased size. The production of the silky threads by which they form their web is their most characteristic peculiarity. By it they are enabled to bridge the intervals from one space to another, and even to indulge in flight through the air. The spider attaches a thread to the outer edge of some exposed surface, and lifts up its abdomen, so that the wind may carry out the thread in a loop. This loop floats towards the point to be reached, and when it strikes it the spider tightens the line, and has a bridge. Or if he wishes an aerial tour, he lets the loop go out till it is sufficient in his judgment to float him, and he then cuts the point of attachment and lets himself go. These flying threads are sometimes very abundant, covering hedges and bushes on their descent, and well known as 'gossamer,' of which they form at any rate a principal part.

STORK (Heb. חֲסִידָה *chasidah*).

The Hebrew word *chasidah* is derived from a root signifying 'kindness.' There is no doubt that 'stork' is the correct translation, and in this most of the versions, except the Septuagint, concur. By some accident they

overlooked the stork, and rendered the word into various different meanings.

The stork is accounted an unclean bird in Lev. xi. 19 and Deut. xiv. 18. In Job there is a reference to the feathers or wings of the stork as being very striking (xxxix. 13). The quill feathers of the wings are black, and the contrast of these with the rest of the plumage of the bird, which is pure white, is very beautiful. The wings too are large and powerful, with an expanse of seven feet. 'They had wings like the wings of a stork' (Zech. v. 9).

In Psalm civ. 17 we read, 'as for the stork, the fir-trees are her house.'

Although at present the stork does not breed in trees in Palestine, this is chiefly for the best reason, that there are few or no trees for it to breed upon. The stork builds wherever it can find a place near its food, and if no trees offer it selects houses or ruins, or rather it selects these in preference. In Denmark, Sweden, and Germany, storks build in trees, and there is no reason to suppose they did not formerly do so in Palestine when trees were more plentiful. These birds love to build upon a raised platform, the highest they can find, and when they select trees it is some sort whose summit will permit of a nest being placed there. On account of this instinct ruins suit them admirably, but no doubt originally they resorted to trees. No tree is better suited for their purpose than the fir-tree tribe, and of these the Aleppo pine (*Pinus halepensis*) is one found in Palestine. It is not now common, but may be met with occasionally, as on the roadside up the Lebanon from Beyrout and about the Lower Lebanon.

In Jeremiah viii. 7 we read, 'Yea, the stork in the heaven knoweth her appointed times; and the turtle and the crane and the swallow observe the time of their coming; but My people know not the judgment of the Lord.'

The stork is a migratory bird, reaching Palestine about the last week in March. Unlike most migrants, it flies by day and at a great height in the air, so that the arrival of the 'stork in the heaven' is patent to every one. Like the swallow, the same pair always return to their own breeding-place, and on their arrival they display the utmost delight at finding themselves at home once more. It is also joyfully welcomed by the inhabitants in every country where it arrives. It is a protected bird, and nesting-places are provided for it to live in, and the house chosen by the stork to breed in is deemed a lucky one. In parts of Europe and the East there is a heavy fine for molesting either the storks or their nests. This arose in the first place from the old superstitious belief which gave it its Hebrew name and its Latin one *pia avis*, and which seems in some measure to be founded on fact, that it was a bird of remarkable filial devotion. Storks were believed in their flight to assist one another. If the parent birds grew weary, the young would take them on their back or let them rest their necks on their bodies during the long flights of migration. There is a well authenticated story of a fire in Delft, during which a nest of young storks was burnt. The parents did all they could to save them, and when they found their efforts useless, they chose to remain and perish in the nest with their young rather than escape. There is, however, a more undeniable claim upon humanity on behalf of the storks than this

somewhat sentimental one. They are scavengers in towns about the market-places, and therefore of much value, but still more as a means of keeping down mischievous pests of various sorts. When they arrive they proceed to quarter the country with regularity, and each stork, or pair of storks, clears its own area of snakes, insects, mice, grubs, and other vermin.

Whether the ancient view of filial piety of the storks be received or not in these practical times is doubtful, but that the parents are most loving and watchful to their young is a well-known fact. So that the force of the name *chasidah* remains unassailable. Though the stork arrives in such numbers in Palestine, it is chiefly as a halting migrant, most of them passing north to breed. A few pairs, however, breed here, and these chiefly about the deserted cities and ruins. They are looked on as sacred birds by the natives.

The white stork (*Ciconia alba*), though breeding in such numbers on the adjoining shores of Holland, does not appear to have been ever more than an irregular visitant to England, as it is still. In its migration it avoids extremes of temperature, Russia and Egypt being its north and south limits.

Another stork, the black stork (*Ciconia nigra*) is found sparingly in South Palestine in winter.

### Swallow.

The manner in which the word 'swallow' occurs in the Bible as the rendering of the Hebrew is somewhat confusing. Two Hebrew words are so translated, דְּרוֹר *deror* and עָגוּר *agur*. The last word is now generally admitted by Hebrew scholars to be wrongly translated, and the mistake arose from an interchange with a previous word.

The word *agur* should really be translated 'crane,' and the word which signifies 'swallow' is in reality סוּס *sus*, or סִיס *sis*. The passages referred to are quoted elsewhere. [See CRANE.] They occur at Isa. xxxviii. 14 and Jer. viii. 7. The Septuagint in each case gives *sus*, 'swallow.'

The word *deror* is met with in Ps. lxxxiv. 3, 'Yea, the sparrow hath found a house, and the swallow a nest for herself;' and again in Prov. xxvi. 2, 'As the bird by wandering, as the swallow by flying, so the curse causeless shall not come home.' *Deror* signifies 'freedom,' and the swallow is perhaps as 'free' a bird as any other,—untameable, swiftly flying, and of wandering disposition.

THE SWALLOW.

With regard to the term *sis*, Canon Tristram tells us it is still the name of the 'swift' amongst the Arabs. Swifts (*Cypselus*) are usually classed by all except professed ornithologists with swallows (*Hirundo*), from their similar flight and modes of life. But they are in reality placed in different orders, on account of their widely

different anatomical structure. The name *sis*, which is derived from the piercing shrill hissing cry, is very suitable to the swifts. The term 'chatter,' however, does not apply to the swift nearly so well as to the note of the swallows.

Another point in favour of the swift is that it is a more regular migrant than the swallow in Palestine. The latter species remain in considerable numbers throughout the winter, whereas the swifts disappear entirely until the following spring, when they reappear suddenly in such numbers that in one day the land is full of them.

Of swallows and the closely-allied martins (*Cotile*) there are about half-a-dozen species in Palestine. One of these, however, the Oriental swallow (*Hirundo Savignii*), which is a very conspicuous species along the maritime plains in winter, and a constant resident, is probably merely a form of our own common species (*H. rustica*), which is a summer visitor to Palestine. There is also the red-rumped swallow (*H. rufula*), which is only found in summer.

Of martins there are four species: the martin (*Chelidone urbica*), the sand martin (*Cotile riparia*), the crag martin (*Cotile rupertris*), and the pale crag martin (*C. obsoleta*), which is confined in Palestine to the Dead Sea basin. The last two remain the winter, but the others are summer visitors.

Of swifts there are three sorts: the common swift (*Cypselus apus*), the white-bellied swift (*C. melba*), and the white-rumped swift (*C. affinis*). Of these the first is the only abundantly and widely distributed species. Swifts of this, the common English sort, return in countless multitudes to Palestine in April, and leave in

November. Their migration must have been always a well-known fact, and there can be no doubt that this bird, the *sis* of the Arabs, is also the swallow (*sus*) of the Bible.

SWAN (Heb. תִּנְשֶׁמֶת *tinshemeth*).

The Hebrew word *tinshemeth* is found amongst the list of unclean birds in Lev. xi. 18 and Deut. xiv. 16. It is there translated 'swan,' but this must be erroneous, for the double reason that swans are, and in all probability always were, very rare in Palestine, and that were they common or known at all to the Israelites it is not likely that they would have been regarded as unclean. They are vegetable-feeders, and cygnets have been generally regarded as good to eat.

In the Jewish Bible this word is untranslated. The Septuagint and Vulgate render it either 'porphyrio' or 'ibis.' Either of these is likely enough to be the bird meant, and the original seems to point to an aquatic bird. The meaning of the Hebrew word is, however, highly ambiguous. In verse 30 it is translated 'mole,' and, as has been shown already, it is most likely there intended to represent the 'chameleon.'

Of the two water fowl suggested, the ibis is the most acceptable interpretation at first sight. It was sacred amongst the Egyptians, and connected with their idolatrous worship, and it was also a bird of very unclean feeding. No doubt the Israelites were very familiar with the sacred ibis (*Ibis religiosa*) in Egypt. But the bird is not found in Palestine, and has become extinct on the Lower Nile. Nevertheless, from its abundant representation on their monuments, and also in the

mummified state amongst their tombs, it must formerly have been very common in Lower Egypt.

The other species, the porphyrio or violet gallinule (*Porphyrio hyacinthinus*), is a large handsome purple water hen as big as a duck. It is, however, by no means abundant in Lower Egypt except on the Fayoom, according to Capt. Shelley, and, as Tristram tells us, it is very rare in Palestine. A much more likely bird is our common water hen or gallinule (*Porphyrio chloropus*), which is everywhere abundant in Palestine and Egypt; and with it might have been included the coot (*Fuligula atra*), its constant associate, and an equally abundant bird.

SWINE. See BOAR, WILD.

TORTOISE (Heb. צָב *tsab*).

This word occurs only amongst the unclean animals in Lev. xi. 29. The word *tsab* has been identified with the Arabic ضبّ *dhabb*, a large species of lizard (*Uromastix spinipes*) by Bochart. The Septuagint agrees with this idea, and in the Jewish Bible the word is rendered 'lizard' doubtfully.

The *dhabb* is found in Southern Judæa and Sinai. Captain Burton met it in Midian, on the east shore of the Red Sea. It occurs also in Egypt and North Africa, and probably Arabia. It belongs to the thorn-tailed agamas, which have the tail and sometimes the whole back clothed with spiny scales. The 'thorn-devil' or 'moloch' of Australia is the most remarkably prickly of the group. The *dhabb* is a foot in length, and its powerful spiny tail is a formidable weapon of defence. It feeds upon beetles, and can inflict a tolerably severe

bite, holding on, like other lizards, with the utmost tenacity.

Of tortoises there are several species recorded from Palestine. The Mauritanian tortoise (*Testudo ibera*) is very abundant in the Holy Land. It is not found south of the Judæan wilderness, where another closely allied species, Kleinmann's tortoise (*T. Kleinmanni*), takes its place, and prevails through Sinai to Egypt in sandy places. *Testudo Graeca*, the common green pet tortoise, does not occur in the Holy Land.

Of water tortoises (*Emydes*) there are two species in Palestine, *Emys Caspica*, the terrapin, and *E. europaea*. The terrapin is found in lakes, streams, and pools in all parts of Palestine. It is very abundant in Huleh, and feeds on fish and frogs. It has a rank offensive smell. Its flat carapace and long tail and neck at once distinguish it from the land tortoise. The European terrapin extends as far west as the south of France, and is often sold in England as a pet, being of lively and engaging habits. It has a few small yellow spots on the carapace, which serve as a distinguishing mark.

The land tortoise is eaten by the natives, as are also its eggs.

TURTLE-DOVE. See DOVE.

UNICORN (Heb. רְאֵם *reem*).

The *reem* is mentioned several times in the Bible, and always in connection with its great strength and the enormous size of its horns. 'He hath as it were the strength of an unicorn' (Numb. xxiii. 22). 'His glory is like the firstling of his bullock, and his horns are like the horns of an unicorn' (Deut. xxxiii. 17). In this

passage the marginal reading 'an unicorn' (not 'unicorns') is the correct one, and the context agrees with it in demonstrating that a two-horned animal is referred to. The *reem* is spoken of as a fierce and terrible beast in Psalm xxii. 21, 'Save me from the lion's mouth: for Thou hast heard me from the horns of the unicorns.' So also in Isa. xxxiv. 7, 'The unicorns shall come down with them, and the bullocks with the bulls; and their land shall be soaked with blood.'

In Job is given a poetic account of the *reem*: 'Will the unicorn be willing to serve thee, or abide by thy crib? Canst thou bind the unicorn with his band in the furrow? or will he harrow the valleys after thee? Wilt thou trust him because his strength is great? or wilt thou leave thy labour to him? Wilt thou believe him that he will bring home thy seed, and gather it into thy barn?' (xxxix. 9–12).

The translation of the word *reem* by 'unicorn,' an animal partly horse, partly narwhal, partly antelope, and wholly fabulous, is adopted from the rendering of the Septuagint μονόκερως, and it is an unfortunate interpretation, which has been happily amended to 'wild ox' in the Revised Version.

There are several arguments in favour of an animal of the ox tribe. The Bible text itself associates it with the domesticated cattle, contrasting the tameable species with its wild and savage congener. In Isa. xxxiv. 7 the *reem* is spoken of as suitable for sacrifice, and we know oxen were especially ordained to be used for this purpose.

Apart from this internal evidence we have other proofs to bring forward. In the first place, there is no doubt that the auroch (*Bos primigenius*) is the same as the

*urus* of Cæsar and other ancient writers. This wild ox, the European bison, is now almost entirely extinct, but is still preserved by severe game laws in Lithuania, Moldavia, Wallachia, and the Caucasus. It is a very powerful animal, with long horns, and gallops swiftly, with its head lowered. An old bull is a match for at least four wolves. Cæsar, in his description of the Black Forest, says, 'They are little less than elephants in size, and are of the appearance, colour, and form of a bull. Their strength as well as speed is very great. They spare neither man nor beast that they see. They cannot be brought to endure the sight of men, nor can they be tamed even when taken young. *The people, who take them in pitfalls, assiduously destroy them;* and young men harden themselves in this labour and exercise themselves in this kind of chase; and those who have killed a great number, the horns being publicly exhibited in evidence of the fact, obtain great honour. The horns in magnitude, shape, and quality differ much from the horns of our oxen. They are much sought for, and after having been edged with silver at their open ends, are used for drinking vessels at great feasts.'

It is evident from the above that not only was the *urus* abundant in Germany in Cæsar's time, but also that there is no difficulty in believing that that abundance must rapidly diminish with an increasing spread of people and civilization. The *urus* was an animal to be extirpated as speedily as possible.

Besides this European evidence we have that of the Assyrian monuments. Layard tells us that the 'wild bull of the bas-reliefs of Nimroud is evidently a wild animal which inhabited Mesopotamia or Assyria.

Its form is too faithfully delineated to permit of the supposition that it was an antelope. It is distinguished from the domestic ox by a number of small marks covering the body, and probably intended to denote long and shaggy hair.' And this writer goes on to adduce arguments that it became extinct in the later period of the Assyrian empire in that region.

Whether this animal was identical with the Lithuanian bison it is impossible to say. There may have been two varieties of wild ox. But Layard points out that the Assyrian animal was regarded as 'scarcely less formidable and noble game than the lion' in the days of Semiramis and Sennacherib, and we have seen that later in the little civilized forest countries of Central Europe it was similarly spoken of by Cæsar.

Some of the commentators have identified the *reem* with the ريم *rim*, an Arabic name for the 'oryx,' chiefly on account of their similarity of names. But, as Canon Tristram points out, when an animal becomes extinct, the popular name is apt to be transferred to some other animal resembling it. And there is reason to believe the auroch became early extinct in the regions about the Holy Land. The mention of it as a familiar animal ceases in the Bible after the time of David.

What the exact characteristics of the mighty *urus* of Cæsar were, and whether that animal be identical with the Lithuanian auroch, and also with the bull of the Assyrian chase, is far too difficult a question to enter into here. A paper by Mr. Boyd Dawkins, on the ancient urus, may be referred to, in the Quarterly Journal of the Geological Society, 1866, and more will be found on the subject in other recent palæontological and zoological works. Canon Tristram discovered four teeth in

the bone breccia of the Lebanon, which were identified by Boyd Dawkins as belonging to some gigantic wild ox, no doubt the auroch or urus. This is confirmed in a most interesting way, as Houghton shows, by the Assyrian records. On a broken obelisk, an Assyrian king (probably Tiglath Pileser I) proclaims 'Wild *rimi* destructive, which he slew at the foot of Lebanon.'

Enough has been said, however, to show that in all probability some species of wild ox was intended by the word *reem*, and also that not only is the rendering 'unicorn' a very unlucky one, but also that the animal probably meant is one of extreme appropriateness in those passages which it serves to illustrate.

VULTURE (Heb. דַּיָּה *dayah*).

The word *dayah* is translated 'vulture' in the list of unclean birds in Lev. xi. 14 and Deut. xiv. 13. In Isa. xxxiv. 15 the word also occurs, 'There shall the vultures be gathered, every one with her mate.'

This word *dayah* is in all probability the same as the modern Arabic هدية *hadaiyeh*, which is commonly used for the black kite (*Milvus migrans*). We have already seen that a similar word, *ayah* [see KITE], is used of the red kite, and is once also translated 'vulture.'

The black kite is a summer visitant to Palestine, and is never seen there in winter. It appears in vast numbers about the beginning of March, and at once locates itself where it can most conveniently feed on garbage, as in the suburbs of larger towns and about the Arab villages. In these situations it is so numerous that it is almost in flocks. It is harmless and useful, apparently rarely meddling with domesticated birds, but confining itself to

waste and offal, and being therefore regarded as a scavenger.

The black kite is a dull blackish-brown bird, tawny underneath, and with the tail less forked than in the common red kite. It is about twenty-one inches in length, and has a beautifully graceful flight, sweeping in easy curves, and approaching mankind and his habitations fearlessly. The black kite appears to have an extensive range, though it is chiefly found in South

THE VULTURE.

Europe, North Africa, and eastwards no further than Persia. It has, however, been obtained in India, Cape Colony, and as far north as Archangel in Russia. A single specimen was procured in Northumberland in 1867; and it is said to be increasing in Southern France, in proportion as the red kite, once so common in this country, diminishes in numbers.

The black kite makes its nest in a tall tree or the root of a shrub in a cliff, and is careful to line it with

bits of cast-off Arab clothing, rags, wool, skins of serpents or wings of birds, which give it a most grotesque and untidy appearance. All the smaller scavenging birds, such as crows, ravens, and other hawks, delight in persecuting this bird, which appears to be very unpopular with them.

### Weasel (Heb. חֹלֶד *choled*).

This word occurs only in Lev. xi. 29 amongst the 'unclean creeping things that creep upon the earth.' From the resemblance of the term to the Arabic خلد *khuld*, which signifies the 'mole-rat,' it has been conjectured that this is the animal intended. But we have already seen that 'mole' is the translation of another word in the subsequent verse. As the word *choled* occurs nowhere else in Scripture, and as we have no other clue to its signification, it is wise to let 'weasel' stand, especially as there are several animals of the kind in Palestine. The best suggestion seems to be that of the common ichneumon (*Herpestes ichneumon*), an animal which is abundant, and found among scrub and rocky places along all the cultivated plains. It resembles the weasel in some respects. The ichneumon belongs to the family *Viverridae*, which includes also the ferret, which is not unfrequent in Palestine.

Of the family which contains the true weasels (*Mustelidae*), the polecat (*Putorius foetidus*) and the southern weasel (*Mustela boccamela*) have been obtained in Palestine, but do not appear to be anywhere common or well-known.

## Whale.

This word is the translation of תַּן *tan*, or תַּנִּין *tannin*, in a few places in Scripture, elsewhere rendered Dragon, Leviathan or Fish. *Tannin* is also translated 'sea-monster' in Lam. iv. 3, and there it clearly refers to a mammal, 'Even the sea-monsters draw out the breast, they give suck to their young ones.' In the New Testament 'whale' is the rendering of κῆτος, which probably denotes, like the Latin *cete* or *cetus*, any sea-monster.

Forskahl speaks of two instances of some species of Balaena (whale) having been cast upon the shores of the Red Sea. Some of the northern sorts of Balaena are found off the coast of Spain and occasionally enter the Mediterranean. Again in the *Hyperoodontidae* or beaked whales, according to Dr. Gray, two species of *Petrorhychus* and one of *Neoziphius* are found in the Mediterranean. Amongst the *Delphinidae* (dolphins), another family of the cetaceans, representatives of Delphinus, Grampus, Phocaena (porpoise) and probably Electra are also found in these waters.

In the order Sirenia, the Dugong (*Halicore Hemprichii*), of which there are perhaps two species, inhabits the Mediterranean.

In the order Carnivora, Phocidae (seals) are represented in the Mediterranean by a species of *Pelagius*.

Any of these animals, especially the larger ones, might come under the heading of 'sea-monsters which give suck to their young ones,' as they are all air-breathing aquatic mammals, which give birth to their young alive, and suckle them. The fish spoken of in Jonah i. 17 [see Fish] could not have been a true cetacean, since all of that class are possessed of small swallowing powers.

It is better to regard the 'great fish' as an interposition of Providence than to deal with its zoological position.

It is not unlikely that some species of northern whale ranged more often into the Mediterranean in former times than at present. The continued war of extermination that is waged against these animals by mankind must have told largely on their numbers.

### Wolf (Heb. זְאֵב *zeeb*).

The Hebrew word *zeeb* is always translated 'wolf.' Its Arabic equivalent of the present day is ذيب *ḍeeb*.

The wolf is mentioned in the Bible as a type of ferocity and voracious greediness, and almost always in connection with its ravages amongst the flocks. Its habit of attacking its prey at eventide is often referred to; but although the animal is mentioned thirteen times in the Bible, and was certainly very abundant, we have nowhere an actual individual introduction of a wolf in any of the Scriptures, nor any allusion to an occurrence in which a wolf takes part, as we have of most of the other large animals. The wolf is always spoken of in a metaphorical sense, and used as a type to illustrate cruelty or some such quality. Like a sheep-hunting dog, the wolf delights in slaughter, and will kill sheep till he is tired before his bloodthirstiness is appeased and he satisfies his hunger. Mutton is their natural food.

With reference to its hours of foraging we read, 'a wolf of the evenings shall spoil them' (Jer. v. 6), 'their horses are fiercer than evening wolves' (Hab. i. 8), 'Her princes are lions, her judges are evening wolves' (Zeph. iii. 3). These passages also refer to its fierceness, as do also others in Gen. xlix. 27, Ezek. xxii. 27; and its

devastations amongst the lambs are singled out for illustration by the prophet Isaiah, and also by our Lord in the New Testament, 'the wolf catcheth and scattereth the sheep' (John x. 12), 'I send you forth as lambs among wolves' (Luke x. 3).

The wolf (*Canis lupus*) is probably not uncommon in Palestine, but its extreme stealth and nocturnal habits render it seldom seen. There is so little cover of a nature to suit it that it can hardly now multiply to any considerable extent, and it is less likely to escape being harassed in Palestine than in forested countries, where it is still harder to observe. The only occasion upon which I met with wolves was near the summit of Lebanon, by the Damascus road, where a couple were regaling themselves upon a dead camel in heavy snow. They were fearless enough, and hardly took the trouble to retire at our approach. Their tracks were often shown to me, but they are frequently confounded with those of the hyena.

The wolf, on account of its superior craftiness and greater strength, is much more dreaded by the shepherd than the jackal. Although they do not appear to hunt in packs in Syria, as they do in other places, they nevertheless are most destructive from their cunning in eluding the vigilance of both shepherd and dogs by night and seizing the sheep by stealth.

The wolf, strange to relate, was worshipped by the Egyptians, who named a city after it (Lycopolis). By all other nations the wolf was detested. It was probably the same principle of dread veneration which induced the Egyptians to hold the crocodile sacred that made them view the wolf in the same light.

There are several well-marked races or varieties of the

wolf, and in one or other of these it is found all over the northern hemisphere, except where, as in Britain, it has been exterminated. They vary chiefly in their colour, and are to be regarded as races due to climate and other geographical causes.

Wolves are, as we have seen, particularly addicted to mutton, but it is a well-authenticated fact that they delight in eating their brother *dog*, and still worse, they do not hesitate to devour their own fallen comrades. When driven by hunger they are most dangerous to man, and it is strange to read now of the terrorism occasionally caused by wolves in the woody mountainous regions of France, when we reflect how long we have been free from them in this country. In the time of Athelstan (A.D. 925) a retreat was built at Flixton, in Yorkshire, as a refuge to save travellers from becoming a prey to hunting wolves. They were last heard of in these islands as late as 1710 in Ireland, when a presentment for killing them was made in Cork.

## Worm.

Under the term 'worm' a variety of living things were included in former days, and the word 'worm' in the Bible must not be taken in the limited sense in which it is now applied to the *Annelides*, and especially to the genus *Lumbricus*, or 'earth-worm.' In Isa. li. 8, the worm and moth are spoken of as destroying garments, and no doubt the caterpillar of the clothes moth is intended. The Hebrew term here used is סָס *sas*, which does not occur again. [See Moth.]

In several passages the word 'worm' denotes generally any grub or maggot which feeds on putrefying matter. In this case the animal is usually the larval or imperfect

stage of some species of insect. Thus in Exod. xvi. the worms that the manna bred were of this nature, and two distinct words רִמָּה *rimmah* and תּוֹלָעָה *toleah* are employed in the Hebrew original. The words appear to be used interchangeably. The former is used in the same sense in Job xvii. 14, 'I have said to the worm, Thou art my mother,' and 'The worm shall feed sweetly on him' (xxiv. 20), and also in xxi. 26 and vii. 5. Both words are used again in an interchangeable manner in Isa. xiv. 11, 'The worm (*rimmah*) is spread under thee, and the worms (*toloim*) cover thee,' and the context shows that they signify the larvae or grubs which feed on dead bodies.

Caterpillars which feed on vegetable matter are also spoken of under the term 'worms' (*toleah*), 'Thou shalt plant vineyards, but thou shalt not gather the grapes, for the worm shall eat them' (Deut. xxviii. 29), and the 'worm' that God prepared to smite Jonah's gourd is also *toleah*. The term *toleah* is used several times in an opprobrious sense, as our word 'worm' is, to signify anything vile and mean. Thus in Ps. xxii. 6, 'I am a worm, and no man, a reproach of men, and despised of the people;' and in Job xxv. 6, 'How much less man, that is a worm (*rimmah*)? and the son of man, which is a worm (*toleah*)?' and again in Isa. xli. 14, 'Thou worm Jacob.' The worm is the symbol also of eternal gnawing pain, as in Isa. lxvi. 24, 'Their worm shall not die.'

'Worms' in Micah vii. 17 refers rather to serpents or some 'creeping things;' 'They shall move out of their holes like worms of the earth:' or it may here refer to some species of *Lumbricus* or earth-worm.

The elder naturalists included under *Vermes* or worms such widely different forms as corals, shell-fish, zoophytes,

sea anemones, and tunicates. And the word worm is still loosely used in its old signification in such compounds as 'worm-eaten,' 'wire-worm,' and 'blind-worm.'

A very abundant class of so-called 'worms' in Palestine are the millipedes and centipedes, and of these one or two species of *Scolopendra* are especially common. No doubt the genus *Lumbricus* is also represented, but we have little information on this head.

## A Classified List, including all the animals dealt with in the preceding pages, arranged in their scientific order.

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In the appended classification of the animal kingdom, those groups of living things which are in no way alluded to in the Bible are omitted.—Nevertheless, the reader will find included all those which are referred to in this work in illustration or explanation of doubtful passages.

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# VERTEBRATA.

## CLASS.—MAMMALIA.

### ORDER.—Quadrumana. Apes and Monkeys.

Catarrhines. Old World Monkeys.
Anthropomorpha. Man-shaped.
Cynomorpha. Dog-shaped.
Semnopithecus. Sacred Apes or Monkeys.

### ORDER.—Chiroptera, or Wing-handed Mammals. The Bats.

Frugivora. Fruit-eating Bats.
Insectivora. Insect-eating Bats.
Vespertilio—Rhinolophus—Plecotus—Rhinopoma—Taphozous.

### ORDER.—Insectivora. Insect-eating Mammals.

Erinaceidae.
Erinaceus. Hedgehog.
Talpidae.
Talpa. Mole.

### ORDER.—Carnivora. Flesh-eating Mammals.

Felidae. Cats.
Lion—Leopard—Cheetah, or Hunting Leopard.
Hyaenidae. Hyaenas.
Viverridae. The Civet family.
Herpestidae (the Ichneumons).

Canidae. Dogs.
Dog—Wolf—Jackal—Fox.
Ursidae. Bears.
Mustelidae. Weasel family.
Weasel—Polecat—Ferret—Badger.

ORDER.—PINNIPEDIA. MARINE CARNIVORA.

Phocidae. Earless Seals.
Cetacea. Whales—Dolphins—Porpoises.
Sirenia. Halicore or Dugong.

ORDER.—PROBOSCIDEA. ELEPHANTS.

ORDER.—HYRACOIDEA. CONIES.

ORDER.—UNGULATA. HOOFED QUADRUPEDS.

Perissodactyla. Odd-toed Ungulates.
Equidae. Horses.
Asinidae. Asses—Onagers.
Artiodactyla. Even-toed Ungulates.
Suidae. Hogs.
Hippopotami. ('Behemoth'.)
Ruminantia.
Horned Ruminants.
Bovidae or Hollow-horned Ruminants.
Oves. Sheep and Goats.
Gazelles.
Antelopes — Addax — Oryx — Bubalus — Oxen — Buffalo — Bovidae.
Cerfoidae or Antlered Ruminants.
Fallow-deer—Roe.
Tylopoda. Camels.

ORDER.—RODENTIA.

Simplicidentata. Simple-toothed Rodents.
Miomorpha. Mouse-like Rodents.
Muridae. Rats—Mice—Hamsters—Gerbilles—Voles.
Spalacidae. Mole-rats.
Dipodidae. Jerboas.
Histricidae. Porcupines.
Duplicidentata. Double-toothed Rodents.
Leporidae. Hares—Rabbits.

## CLASS.—AVES. BIRDS.

### DIVISION I. CARINATAE. CARINATE BIRDS.

#### ORDER.—ACCIPITRES. BIRDS OF PREY.

Sub-order.—Falcones. Falcons.

Vulturidae. Vultures.
Falconidae. Hawks.
Buteoninae. Buzzards.
Aquilinae. Eagles.
Falconinae. Falcons.
Accipitrinae. Long-legged Hawks.
Sub-order.—Pandions. Ospreys.
Sub-order.—Striges. Owls and Barn-Owls.

#### ORDER.—PICARIAE. PICARIAN BIRDS.

Cuculidae. Cuckoos.
Cypselidae. Swifts.
Caprimulgidae. Goatsuckers.

#### ORDER.—PASSERIFORMES. PERCHING BIRDS.

Corvidae. Crows.
Brachypodinae. Bulbuls.
Hirundinidae. Swallows.

#### ORDER.—COLUMBAE. PIGEONS.

#### ORDER.—GALLINAE. GAME BIRDS.

Pteroclidae. Sand-grouse.
Tetraonidae. Grouse—Partridges—Quails.
Pavoninae. Peacocks.

#### ORDER.—GRALLAE. WADING BIRDS.

Rallidae. Rails.
Otidae. Bustards.
Gruidae. Cranes.

#### ORDER.—HERODIONES. HERONS.

Plataleidae. Ibises.
Ardeidae. Herons—Bitterns—Egrets.
Charadriadae. Plovers (Lapwing).
Ciconiidae. Storks.
Phoenicopteridae. Flamingos.

ORDER.—Anseres. Ducks—Geese—Swans.

Cygnidae. Swans.

ORDER.—Pelecanidae. Pelicans and Cormorants.

ORDER.—Gaviae. Sea Birds.

Laridae. Gulls and Terns.

DIVISION II. Struthious Birds.

ORDER.—Struthionidae. Ostriches.

## CLASS.—REPTILIA. REPTILES.

ORDER.—Chelonia. Tortoises and Turtles.

ORDER.—Crocodilia. Crocodiles and Alligators.

ORDER.—Sauria or Lacertidae.

Lacertidae. Lizards.
Monitoridae. Water-lizards.
Agamidae. Dhabbs.
Geckotidae. Geckos.
Chamaeleonidae. Chamaeleons.
Scincoidae. Skinks or Sand-lizards.

ORDER.—Ophidia. The Snakes.

Sub-order.—Thanatophidia. The Poisonous Colubrine Snakes.
Elapidae. Terrestrial Poisonous Colubrine Snakes.
Naja. The Cobras.
Sub-order.—Solenoglyphia. The Viperine Snakes.
Viperinae. Viper—Adder—Horned Cerastes.
Sub-order.—Colubriformes. Harmless Snakes.
Psammophidae. Desert Snakes.
Colubrides. Common Snakes.
Pythonidae. Rock Snakes.
Erycidae. Sand Snakes.

## CLASS.—AMPHIBIA.

ORDER.—Anoura. Tailless Batrachians.

Ranidae. Frogs.
Bufonidae. Toads.

## CLASS.—PISCES. FISHES.

ORDER.—SELACHOIDEI. SHARKS—DOGFISHES.

ORDER.—RAJDEI. SKATE—RAYS.

ORDER.—PHARYNGOGNATHI.

Chromidae.

ORDER.—ACANTHOPTERYGII.

Percidae. Perches.
Sparidae. Sea-Breams.
Cythina. John Dory.
Coryphaenina. Coryphaene.
Scombrina. Mackerels—Tunnies—Remora.

ORDER.—PHYSOSTOMI.

Siluridae. Sheatfish.
Cyprinodontidae. Carps—Goldfish—Gudgeon, &c.
Muraenidae. Eels.

ORDER.—MARSIPOBRANCHII.

Petromyzontidae. Lampreys.

# INVERTEBRATA.

## CLASS.—MOLLUSCA.

ORDER.—GASTEROPODA.

Strombidae. Wingshells.
Buccinidae. Whelks.
Scalariadae. Wentle-traps.
Melaniadae. Melania—Melanopsis.
Ianthinidae. Violet Snails.

ORDER.—PULMONIFERA.

Helicidae. Snails.
Limacidae. Slugs.

ORDER.—CONCHIFERA.

Unionidae. Fresh-water Mussels.

## CLASS.—INSECTA.

ORDER.—COLEOPTERA. BEETLES.

ORDER.—HYMEROPTERA.

Aculeata, or Stinging Hymenoptera.
Apiariae. Bees.
Bombus—Anthophora—Osmie—Megachile, &c.

Vespidiae. Wasps—Hornets.
Formicidae. Ants.

ORDER.—LEPIDOPTERA.

Butterflies and Moths.

ORDER.—DIPTERA.

Culicidae. Gnats or Mosquitoes.
Muscidae. House-flies.

ORDER.—APHANIPTERA. FLEAS.

ORDER.—RHYNCHOTA.

Heteroptera. Bugs.
Pediculina. Lice.

ORDER.—ORTHOPTERA.

Gryllidae. Crickets.
Locustidae. Locusts.
Acridiidae. Grasshoppers and True Locusts.
Blattidae. Cockroaches.

## CLASS.—MYRIAOPODA.

ORDER.—CHILOPODA. CENTIPEDES.
ORDER.—CHILOGNATHA. MILLEPEDES.

## CLASS.—ARACHNIDA.

Family Scorpionidae. Scorpions.

ORDER.—ARANEIDA. SPIDERS.

## CLASS.—VERMES. WORMS.

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